LINKING TRAINING AND EMPLOYMENT:

A CASE STUDY OF TRAINING SYSTEMS IN JORDAN

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Acknowledgements

This study is one of three field studies conducted by the Training for Employment Project. Honduras and Panama are the other study sites. The purpose of the studies was to examine the linkage between the demand and the supply of skilled workers. Often vocational programs are established without a strong employer/training connection, or they may become insular over time. If greater insight can be gained on how to link training programs more functionally with employer skill needs, then perhaps U.S.AID's training instructions can be designed to have greater impact. These three studies set out to examine the relationship between training and employment.

The Jordanian study team was comprised of four individuals, and the study was conducted during July and August, 1984. Robert Darcy and Jorge Sanguinetty developed working notes on the demand side of the problem, thus providing an understanding of training needs and supply from the perspective of employers. Dennis Herschbach and Bruce Reinhart prepared working notes on the Jordanian training systems. Dennis Herschbach wrote the final report.

A number of Jordanians generously contributed their time, and their insights were extremely helpful. In addition, their friendliness and cooperation made the study a satisfying undertaking. We wish especially to acknowledge the help of Mr. Sami Nsour of the National Planning Council, Mr. Munther Masri of the Vocational Training Corporation, Dr. Mansoor Outum of the Ministry of Labor, Dr. Borhan Shrydeh and his excellent staff in the Department of Statistics, Mr. Mustafa Obaid, of the Ministry of Education, and Dr. Ahmad Al-Tell of the community college system. Appendix A continues a more complete list of individuals who contributed their time to the study team. Their assistance is highly appreciated.

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Executive Summary

This study examines the relationship between the skill-training systems in Jordan and the ways in which the skill needs of employers are addressed. The purpose is to shed light on how skill-development programs can be designed to be more responsive to employment-related needs and more efficient in preparing individuals for jobs. The training systems in Jordan were selected for study because a specific skill-training strategy has been formulated by the government. In addition, a multi-institutional approach has been followed, the skill-training systems are of recent origin, and the Jordanians have successfully coped with a range of complex skill-training problems. Some generally instructive lessons are provided.

Training systems function within a social and economic context. Accordingly, Chapter Two presents a description of the Jordanian economy and labor force. The phenomenon of labor migration is examined, and the views of a selected sample of employers are presented regarding the training system.

The overall economic development has been substantial, although there has been a recent economic downturn following the general worldwide slump. External assistance in the form of grants and loans and remittances from workers abroad continue to be important sources of income. While substantial growth has occurred in the East Bank domestic economy, it is too small to allow for continued expansion; future growth depends primarily on the expansion of export markets.

The phenomenon of labor market migration dominates all analyses of the labor market; massive numbers of Jordanians migrate to the Arab oil-producing countries in search of jobs, presently estimated at over 320,000 individuals. Without external employment opportunities, the Jordanian domestic labor market simply could not absorb the supply of workers. As a consequence of labor migration, the Jordanian domestic economy has suffered skill shortages. The Jordanian government has embarked on a planned program to expand education and training opportunity throughout the kingdom.

Domestic employers generally view skill demand and supply disequilibria as a result of the outflow of workers to the surrounding oil-producing region. They also have concerns regarding the quality of the labor force, and worker attitudes are considered a serious obstacle to employment, to the quality of work, and to productivity. Insufficient practical training and inadequate work experience are also considered problems with new labor force entrants, and there is considerable uncertainty regarding the qualifications of trainees.

The growth of skill-training programs is a response to increased domestic and regional demand for skilled labor, and to dramatic population increases. In Chapter Three the skill training systems are reviewed, including formal secondary programs administered through the Ministry of Education, community college programs, the Vocational Training Corporation, and training conducted by employers. The growth of formal vocational training programs has been striking, paralleling

the growth in general education. Formal programs include two-year trade training centers and three-year secondary vocational programs. Currently 18,000 students are served through these programs.

Over 32,000 students are enrolled in the 46 institution community college system. The major function of the community college system is to prepare middle-level manpower and skilled technicians for government and private sector employment. Graduates have high placement rates due to the level and quality of training received.

The Vocational Training Corporation (VTC) was established in 1970 to address in-plant training through an apprenticeship system. Although the VTC is an autonomous organization, it maintains policy and program ties with the Ministry of Education. Currently enrolled in the three-year program are 6,000 apprentices, and short-term training courses are provided to 2,000 individuals annually.

A number of large firms also conduct training. In general, training is of good quality: adequate resources are available, training departments are staffed with specialists, and training is an ongoing, integral activity of the firms. A variety of training activities are conducted on an ad hoc basis by medium-size and smaller firms. Training is often improvised to fill an urgent and specific need. This may range from short-term, low-skill training under direct job supervision to more organized and structured forms of training. Small firms tend to rely heavily on formal sector training programs for individuals who at least have the foundation on which additional training can be structured.

The government-financed training systems are probably over-extended. Program expansion has not kept up with available resources. Formal secondary programs have a problem with staff shortages, and not enough qualified individuals can be retained. In addition, there is a lack of curriculum materials, while better program management is needed.

Chapter Four examines in greater depth the Vocational Training Corporation and the community college system. A key element in the success of the apprenticeship training is the combination of practical on-the-job training and formal instruction. In addition, there is close collaboration between trainers and employers. The community college system prepares technicians -- individuals who occupy the important middle ground between professional and skilled or semi-skilled workmen. These institutions account for roughly 65% of the student intake in technician training programs. Of high potential are short-term courses offered in conjunction with firms, although presently they constitute only between five to eight percent of the total course offerings.

The characteristics of the Jordanian skill-training system are summarized in Chapter Five. The multiple training alternatives contribute to a development strategy that has addressed the skill needs of the domestic economy rather successfully on the whole, while at the same time responding to the regional demand for labor.

There are a number of conditions that contribute to establishing a strong training/employment link. One condition is the extent to which the output of the training system is related to labor market requirements. In Jordan, however, there is no good way of estimating labor market needs. There is a lack of information, and shortages and excesses of trained manpower appear to exist. The Jordanians have, nevertheless, followed a policy of providing training opportunities with little concern for demand. The view is held that trained individuals can put their skills to better use than the untrained.

Other conditions that impinge upon the establishment of a strong training employment connection relate to the quality of training. These include financial resources, instructional content, staffing, and program management.

Finally, yet another way in which training interventions can be made more responsive to employment-related skill needs is to strengthen the routine, day-to-day working relationships between those who employ skilled workers and those who train them. There are several conditions that affect this relationship: information networks, incentives, and intervening influences.

Chapter One

Introduction

Social and economic development in Jordan during the past decade has been nothing short of remarkable. Situated in the eye of the Arab-Israeli conflict; faced with an artificially doubled population; poor in natural resources, short of water, and limited in fertile soil, Jordan has nevertheless managed to achieve sustained economic growth. To be sure, complex problems remain, but Jordan has successfully made the transition from a country that until a few years ago was considered a potential "basket case" to one that is establishing a solid development base, improving the welfare of its people, and supplying considerable numbers of skilled workers to the greater surrounding oil-producing region. This has been seen by many as a "minor miracle." Through an enlightened policy toward development articulated by a capable team of planners, severe obstacles to development have been countered. An expanding regional demand for Jordan's goods and services, high levels of foreign assistance, and substantial remittances from workers abroad have provided the capital to support development. And large investments in human resource development have produced the most skilled work force in the region, facilitating growth and the spread of social equity.

Human and economic development are inextricably interwoven. One creates the human resources required to sustain industry and commerce; the other generates the financial resources essential for extending social development. In the case of Jordan, a trained work force has been instrumental in the expansion of domestic and export markets, and it is the high skill level of Jordanian workers that makes them valued in the Gulf States. At the same time, much of the money sent back by expatriate workers helps to fund development -- economic, educational and otherwise. But the large exodus of manpower in turn creates strains on the domestic labor market and generates even more demand for training and retraining.

This study examines the relationship between the skill-training systems in Jordan and how the skill needs of employers are addressed. The purpose is to shed light on how skill-development programs can be designed to be more responsive to employment-related needs and more efficient in preparing individuals for jobs. For the past several decades, considerable investment in skill development has been made in developing countries, often through donor agencies. However, programs have not always met expectations. One apparent reason is the weak link between demand and supply: that is, the employer's need for skilled manpower, and the supply of skilled workers. Skill-training programs simply are not established with a strong employment/training connection.

There is substantial literature on skill training in developing countries. Unfortunately, typical studies tend to be conducted from the vantage point of the internal efficiency of the program, and when the relationship between supply and demand is studied, this is generally done from the perspective of addressing labor-market projections for trained manpower. Seldom is the actual linkage between skill

development and employer demand examined in ways that shed light on the crucial elements in this linkage. We know little about these elements, particularly from the perspective of specific employer needs.

The training systems in Jordan were selected for study because of what can be learned from them about the relationship between training and employer needs. In the first place, training is an integral part of the government's development policy. Accordingly, a specific skill-training strategy has been formulated, and it is possible to examine the extent to which this strategy is effective. Secondly, the approach followed in Jordan has been multi-institutional, thus affording the opportunity to examine skill training from different institutional perspectives. Then again, the skill-training systems are of recent origin, with most of the development occurring within the past decade. The problems faced are quite evident, and the solutions to these problems are in the process of being worked out, thus perhaps providing a better understanding of why certain decisions are made than if the training systems were more mature. Finally, and perhaps most importantly, the Jordanians have successfully coped with a range of complex skill-training problems, and while the institutional response is to a large degree uniquely Jordanian there are, nevertheless, a number of generally instructive lessons. Skill training is very much a part of the social and economic transformation working itself out in Jordan.

Purpose

This study is written for use by policy makers and program planners in the Agency for International Development, and it is intended to assist in the making of more informed decisions concerning the design of skill-training projects for developing countries. The study is also meant to be useful to planners in Jordan, as well as other individuals interested in ways of strengthening vocational program design. The overall objectives of the study are threefold:

- to develop a greater understanding of the dynamics of the employment/training relationship and of what makes this linkage strong;
- to suggest ways of making training interventions more responsive to employment-related skill needs, and
- to suggest specific ways to strengthen the design of skill-training programs.

Sources of Data

The findings reported are based on the work of two study teams, each of which spent four weeks in Jordan. One team was composed of two economists who examined the Jordanian economy, surveyed the potential need for training, and assessed the relative responsiveness of the existing training systems in meeting employment-related skill requirements. The second team was composed of two vocational educators. They examined the skill-training systems, and assessed the potential of these systems for meeting Jordanian skill requirements. In addition, program

elements that tended to support strong employer/training linkages were identified along with inhibiting constraints.

The methodology comprised: a) discussions with government officials and technicians of the Hashemite Kingdom of Jordan as well as representatives of the private sector, notably businessmen, and trade association leaders; b) field visits to a representative group of private and public sector employers, training centers and institutions; and c) interviews with trainers, educators and directors of training. In addition, data on the economy and labor market, enrollments, outputs, and training needs were obtained from published reports, surveys, journal articles and personal meetings (Appendix A).

Agreement on statistical facts was hard to achieve. Sometimes, different government reports had conflicting statistics. At other times, statistics were available only through individuals, but here again conflicting figures were used by different individuals. Part of the problem is due to the large migration of people crossing the relatively open borders in varying numbers into and out of the East Bank, so that there is little stability in repeated counts. Another part of the problem is attributable to the fact that the collection of statistics has not always been done consistently over a period of time. In this study, every effort was made to check and cross-check the figures used.

Organization of the Study

Training systems function within a social and economic context. Accordingly, Chapter Two will present a brief description of the Jordanian economy and labor force, including relevant demographic factors, major development problems faced, and policies and practices impacting on training demand. The phenomenon of labor migration will be singled out for detailed examination because of its implications for training policy. Finally, the perception of employers regarding the existing training systems and the importance of training will be examined.

Chapter Three will address training supply: the characteristics of the existing training systems, the current training capacity, growth patterns, the effectiveness of programs, as well as the relative training investment will be examined. Factors that tend to promote or inhibit the development of a functional relationship between training and employer needs will be discussed with regard to the formal educational system.

In Chapter Four, two exemplary programs, the Vocational Training Corporation and the community college system, will be examined. These programs appear to be meeting the needs of employers, and they have the potential to play an increasingly important role in the continued social and economic development of Jordan. The key elements that make these programs successful will be discussed, as will the limitations faced.

Finally, in Chapter Five, the general findings of the study will be presented. Examined in more detail will be the question of how to

strengthen skill-training programs in order to make them more responsive to employment-related needs and more efficient in preparing individuals for available jobs.

Some Terms Clarified

At the outset, a number of terms need to be clarified. "Demand-side" refers to employers and, more specifically, to their need for trained manpower. This is a more restricted use of the term than economists generally envision. "Supply-side" refers to training sources -- the supply of skilled manpower. Formal training programs are those programs that operate within an established system and that are supported through governmental funding. In Jordan, these include the vocational programs administered through the Ministry of Education: two-year Trade Training Centers (TTC), and three-year secondary vocational programs. Included in the three-year programs are Industrial Secondary Schools (ISS), comprehensive schools that have academic and vocational streams, and general vocational schools offering more than one occupational specialty. The former polytechnics are now community colleges, and they are also under the Ministry of Education.

Conversely, nonformal programs are those which operate outside the established educational system. On-the-job training given by individual employers is an example. The Vocational Training Corporation, a semi-autonomous training organization, has both nonformal and formal characteristics, although strictly speaking it is probably a formal program.

Finally, it is also necessary to consider what exactly constitutes a Jordanian -- a question of some complexity. East Jordanians trace their family origins to the East Bank of the Jordan River. Following the 1948-49 Arab-Israeli War, however, considerable numbers of Palestinian refugees fled to the West and East Banks of the Jordan River, and, following 1967, additional large numbers of former refugees as well as indigenous West Bank residents settled in the East Bank territory. This flow continues at varying rates, and contributes to the Palestinian majority in the East Bank who now consider themselves Jordanian citizens. On the other hand, there is a considerable number of people who live and work outside Jordan, retaining Jordanian citizenship, but who largely remain uncounted in statistical data and are only considered Jordanian because they lived there long enough to get a visa and work permit.

Chapter Two

The Economy, Labor, and Employers

This chapter provides a brief overview of Jordan's economy and labor force, since this is the setting in which supply-demand interactions occur. Economic conditions and labor demand inevitably influence the number and kind of workers that need to be trained.

In the first section of this chapter, basic economic and demographic facts are presented, along with a discussion of the Jordanian labor force. A separate section is included on labor migration and its associated impact on labor supply and training. Finally, the findings of interviews with selected employers are reported.

The Economy and Labor Force

The Jordanian economy is in a state of flux, the result of complex internal and external factors that have a driving dynamism of their own. The whole question of supply-demand linkages, moreover, is conditioned in Jordan by the extremely high variability of its labor force. One way to begin to understand this fact is to examine some of the basic characteristics of the economy and labor force.

Population

Jordan's population in the East Bank is estimated at two and one-half million in an area about the size of Indiana. By all estimates, population growth has been rapid, rising from about 433,657 East Bank citizens in 1946 to 1,470,000 in 1968, with an additional million increase in the past 15 years. Not counted, moreover, are the hundreds of thousands of Jordanians working abroad.

Rapid population growth results from two factors. The first is that Jordan enjoys a high natural growthrate, over 3.8% annually, and one of the highest in the world. Over 50% of the population is under 15 years of age. A second factor is the stream of refugees that has swelled the East Bank population: 500,000 in 1948, 465,000 in 1967, with a steady but fluctuating volume ever since. It is estimated that roughly 12,000 immigrants enter the East Bank each year. Not surprisingly, 60% of the population is comprised of Palestinians (National Planning Council, 1980; Gubser, 1983; Mazur, 1979).

The need to absorb large population increases has resulted in significant political, social and economic strains, severely taxing an already limited resource base and a developing infrastructure. Immigrants, primarily fleeing Palestinian refugees, have had to be absorbed into the social and political structure of the East Bank; housing and roads have had to be built, schools, clinics and factories opened, social services extended, and new land cultivated. The domestic economy has had intense pressure to generate new jobs, a pressure that has been conveniently relieved by employment opportunity abroad.

Economic growth

But external pressures have also shaped the domestic economy. In fact, Jordan's economy can be characterized by sustained growth levels punctuated with periods of decline, a response to external forces. During the period from 1954-1967, for example, a real annual growth rate of 11% was sustained. This dropped precipitously with the outbreak of the 1967 war and its accompanying effects: the loss of the West Bank; guerrilla and Israeli military actions which rendered the fertile Jordan Valley considerably less productive; and growing tensions with neighboring Arab states. Rich agricultural land was lost, and nearly one-half million refugees had to be absorbed into the East Bank economy. A severe strain was exerted on an already limited resource base, and the domestic economy was severely disrupted, while at the same time subsidies from other Arab countries were halted. It was not until after the 1973 war, and particularly after the Rabat Summit conference of 1974, that the economy revived.

The period 1973-75 had an average growth rate of 7%, following efforts to broaden the base of economic development, launch new development activities, and normalize relationships with surrounding Arab countries. The period between 1976 and 1980 enjoyed a sustained economic boom, with a real growth rate of about 11%. After 1980, however, the economy slumped considerably as the world economy entered a downturn, with estimations of real growth ranging from 7.5% in 1981 to a low of 3.5% in 1983. There is some indication that the "recession of 1983-84" has bottomed out, and that the economy is again on the upward swing. There is little expectation, however, of reaching the high growth rates experienced in the years 1976-80. Most informed estimates place the growth rate in the 5-6% range for the next decade. (National Planning Council, 1980, pp. 1-2; U.S. Department of Commerce, 1977; Mazar, 1979; Gubson, 1983, pp. 51-53).

The greatest influence upon the Jordanian economy during periods of growth or decline has been exerted by external forces. The dramatic increase in oil prices, following the 1973 Arab-Israeli war, initiated a regional economic boom from which Jordan has greatly benefited. Large numbers of Jordanians found work in the oil-productive region, and remitted earnings were plowed back into the domestic economy. Substantial loans and grants from oil-rich Arab governments supported domestic development projects. Then again, a rising regional demand stimulated an expanding Jordanian export industry, and the misfortune of neighbors became the good fortune of Jordan: with the violent conflict in Lebanon, many commercial, financial, and technical services shifted to Jordan, and the Iraq-Iran war led to a brisk transit trade.

But the Jordanian economy has also been adversely affected by external influences, indeed, markedly so. A drop in the inflow of grants and loans, coupled with an apparent slowdown in the increase of remittances by Jordanian workers abroad, directly contributed to the recent economic downturn. The surrounding oil-producing states cut down on Jordanian manpower, goods, and services, as there was a corresponding reduction in world demand for oil. At the same time, increased regional competition for markets put added pressure on an already soft market for

export goods. To a considerable extent now, as in the past, continued improvement in the economic growth rate depends upon the political, social, and economic well-being of the larger Middle Eastern region of which Jordan is a part. In a real sense, the Jordanian economy is captive to forces over which it has little control.

Despite both internal and external pressures, the overall economic development has been substantial, particularly by the standards of developing countries, attesting to the success of the Jordanian government in charting a sound development course. The gross national product (GNP) for 1983 was estimated to be $5.1 billion. This amounts to an average income (per capita GNP) of slightly more than $2,000 per person, up from $500 in 1975. Throughout Jordan there is a feeling of improved economic well-being, in spite of the recent downturns. Gross domestic product (GDP) was $4.1 billion, or about $1,700 per person. The difference between GNP and GDP is accounted for in international flows of factor income, notably worker remittances from abroad, which approach one billion (Monthly Statistical Bulletin, March, 1984). The contribution of remittances to the GNP constitutes one of the major sources of income.

External assistance in the form of grants and loans constitutes a second major source of income. As much as 35% of Jordan's GNP is at present externally financed, mainly from Saudi Arabia (National Planning Council, 1980). This may constitute as much as 60% of the total central government's revenues. The domestic contribution to government revenues is surprisingly low, constituting only 37 percent of the total government expenditures. Direct income tax only accounts for about 6.7%, with a large part of the national government's income derived from royalties and profits on shares and from interest on foreign reserves. (Mazur, 1979, chapter 6). It hardly needs to be mentioned that a significant drop in worker remittances and external assistance would have near-disastrous economic consequences.

Jordan's balance of trade, moreover, is in chronic deficit. The value of imported goods consistently exceeds the value of exported goods by four or five times, with the deficit reaching as much as 76% of GDP and 54% of GNP. This is fortunately countered by the large inflow of aid and the considerable remittances from Jordanians working abroad. On the other hand, capital formation is at remarkably high levels, averaging up to 48% of GDP and 33% of GNP (National Planning Council, 1980, pp. 1-2).

Government, a guiding role

As in the case of many other developing countries, Jordan relies on a mixture of private sector initiative and government planning to promote economic progress. Economic activity, both in periods of expansion and slack, has been ably guided by the Jordanians, who display a remarkable capacity for adjusting to prevailing conditions. The National Planning Council (1980) sums up the prevailing policy when it notes that the ability of the government "to adjust to changing conditions, to control and direct these conditions, and . . . to reorganize internally" determines whether or not social and economic challenges can be addressed in "a positive and constructive manner" (p. 2).

During the boom years of 1976-80, an infrastructure was created which provided the foundation for sustained growth, albeit recently at a reduced rate. This includes a network of roads, communication systems, and utilities, in addition to the promotion of capital investment and the promulgation of law encouraging business and industrial expansion. Major industrial development projects have been implemented, export markets established, and agricultural development carried out. A substantial expansion of the educational and training system has been accomplished in the last decade, community development centers established, clinics opened, health services expanded and housing projects started, among other systematic efforts to enhance social and economic development (National Planning Council, 1980). No doubt Jordan has entered a new phase of development, one characterized by a slower growth rate, and accompanied by complex and difficult social, economic and political problems. Nevertheless, a basic infrastructure is in place, and it can guide sustained but moderate growth, given the favorable continuation of internal and external events.

The basic development posture assumed is one that, in the words of Mazur (1979), reflects "a fundamentally free enterprise philosophy shaped by a government attitude of benevolent paternalism" (p. 335). An open, free-enterprise system is strongly encouraged, with foreign investment actively sought. While acting in a regulating capacity, the government also encourages growth through tax exemptions, import protection, and capital investment, including government purchase of shares, loans from the semi-public Industrial Development Bank, and assistance in securing foreign support for domestic firms. The government directly holds shares in a variety of companies, from the small to the very large, from the near-bankrupt to the prosperous. These include hotels and tourism companies, banks and utilities, the cement and potash factories, and a host of firms, ranging from the modest manufacturer catering to the local demand to the National Corporation addressing international markets. Government shareholding is intended to stimulate private investment, protect infant industries, rescue ailing companies, or target growth in critical economic sectors. The number of shares may range from a small minority holding to almost total control, as in the case of the phosphate company where 93% of the shares are government-owned (Mazur, 1979, pp. 228-229). The Royal Endowment Study (1982) estimates that of the 740 establishments in Jordan employing 20 or more workers, 50% are government agencies or companies, and another 20% are partly government-owned.

The labor market

Jordan's labor force is predominantly male, highly educated and skilled, and distinctly international in character, with extreme mobility across national borders. In its June 1984 "Economic Trends Report" (p. 6), the American Embassy places the domestic labor force at about 530,000 for the beginning of 1983. Nearly 20% of the work force is now female, but this figure probably reflects the high rate of female employment in agriculture, mainly as unpaid family workers, part-time workers, or seasonal employees. A realistic figure for the female share of the non-agricultural labor force is probably around 8-10%. At the same time, there are about 150,000 foreign workers inside Jordan,

roughly 23% of the total domestic labor force. As many as 320,000 or more Jordanians are working in other countries.

There are only fifteen firms in Jordan employing over 100 individuals, while 740 firms employ 20 persons or more, and 580 employ five to fifteen workers, producing, assembling or packaging cigarettes, textiles, shoes, paper, paints, detergents, insecticides, steel, tile, building supplies and numerous other products. It is estimated that there are over 7,000 enterprises that employ less than five workers.

Given the pervasive presence of government, it is not surprising that government, or government-related jobs, accounts for 42% of domestic employment. Of this, over 120,000 individuals, or roughly 20% of the domestic labor force, are estimated to be in the armed services, including public security forces. The total service sector in Jordan is estimated to be around 60% of the labor force, a high percentage even in developing countries, and one that reflects two decades of rapid and continuing government growth.

While the service sector shows steady growth, employment in the agricultural sector has experienced rapid decline, dropping from 20% in 1975 to less than 10% in 1983. This reflects in part the use of efficient farming methods, including irrigation, fertilizers, and machinery. It also reflects the general disdain by Jordanians for farm labor and the migration of excess farm labor to urban areas during the expansion years of 1976-80. Presently, over 20,000 foreign laborers are employed in agricultural production, chiefly Egyptians and Pakistanis. The chief problems of the agricultural sector include the lack of sufficient water and a shortage of available land. The fertile Jordan Valley currently supplies 90% of the farm export crop, even though it constitutes only 0.6% of the Jordanian land area. Jordan is dependent on external food sources, a situation unlikely to change in the future, despite generally rising levels of production and an increase in cultivated land. (Guber, 1983; U.S. Department of Commerce, 1977).

Growth in mining, manufacturing, and construction has been considerable. Five large firms dominate Jordanian industry: the phosphate and potash companies, which are extractive; and the petroleum, cement and fertilizer firms, which specialize in processing. The sale of phosphates alone generates 30% of Jordanian commodity exports. Mining and manufacturing combined constitute 15 percent of the domestic labor force. Some 4,950 workers are employed in mining and quarrying, and 3,000 in manufacturing.

The small enterprises produce almost solely for the domestic market. Some of the medium-size firms produce for the domestic and regional markets, and large firms tend to address domestic, regional and international markets. In general, however, Jordanian industry is highly susceptible to external influences, depending on regional or world prices, stable markets, and the minimal disruption of free trade. Moreover, the East Bank domestic market is too small to allow for continued expansion; future growth depends primarily on the expansion of export markets.

The construction industry has exhibited marked expansion, attracting an estimated 21% of fixed investment and employing over 14% of the domestic labor force. In 1970 there were 7,000 construction workers employed; in 1975 there were 40,000, and in 1982 over 70,000. Real wages have shot up as a consequence of shortages of skilled manpower, significantly distorting construction labor costs in Jordan. Over 40 percent of all Jordanians employed in the Gulf States are thought to be working in construction; on the other hand, over 60% of Egyptian and Syrian migrants to Jordan are engaged in construction (Shaw, 1978; Kirwan, 1982).

Remitted wages are basically the driving force behind the significant construction upturn. Jordanian workers abroad invest in land and housing in anticipation of their return home. At the same time, continued migration from rural to urban areas, population increases, a general rise in income levels, and the large influx of refugees have contributed to a housing boom, fueling land speculation and driving up prices. Construction activity has generally outstripped the domestic production of building materials (Kirwan, 1982; U.S. Department of Commerce, 1977).

One of the more striking characteristics of the domestic labor force is its crude participation rate, which has, for some time, remained at a low 21%. The large proportion of individuals under 15 years of age, low female participation, the early retirement of a large number of workers, and the substantial and continued outflow of Jordanian manpower, especially the young, largely account for this low rate (National Planning Council, 1980, p. 293). Recently, primarily in the past five years, the increased domestic demand for labor has led to the importation of manpower from other countries. As previously discussed, there are currently about 150,000 foreign workers in Jordan, constituting roughly 23% of the work force. This includes some 90,000 Egyptians plus varying numbers of Syrians, Lebanese, Iraquis, and non-Arab workers from such countries as India, Pakistan, Korea, Taiwan, the Philippines and Turkey. Jordanians tend to earn higher wages by working in other countries, and Jordanian employers obtain less costly labor by hiring foreign workers, many of whom do the lower-skill, lower-status, more physically demanding jobs, such as construction and farm labor, and domestic services. Other foreign workers, however, are highly skilled, well paid, and do in effect substitute for expatriate Jordanians who are in particularly strong demand in countries such as Saudi Arabia because of the Jordanians' unique combination of attributes -- job skills, language, religion, culture, and political compatibility.

The Phenomenon of Labor Migration

The phenomenon of labor market migration dominates all analyses of the labor market, and it figures in all discussions of training. Massive numbers of Jordanians migrate to the Arab oil-producing countries in search of jobs. It is estimated that 8 out of every 10 Jordanian workers will have worked abroad at one time. Of those countries exporting labor to the Gulf States, Jordan ranks first in the proportion of its labor work force employed away from home. The Ministry of Labor estimates that presently 320,000 Jordanians are

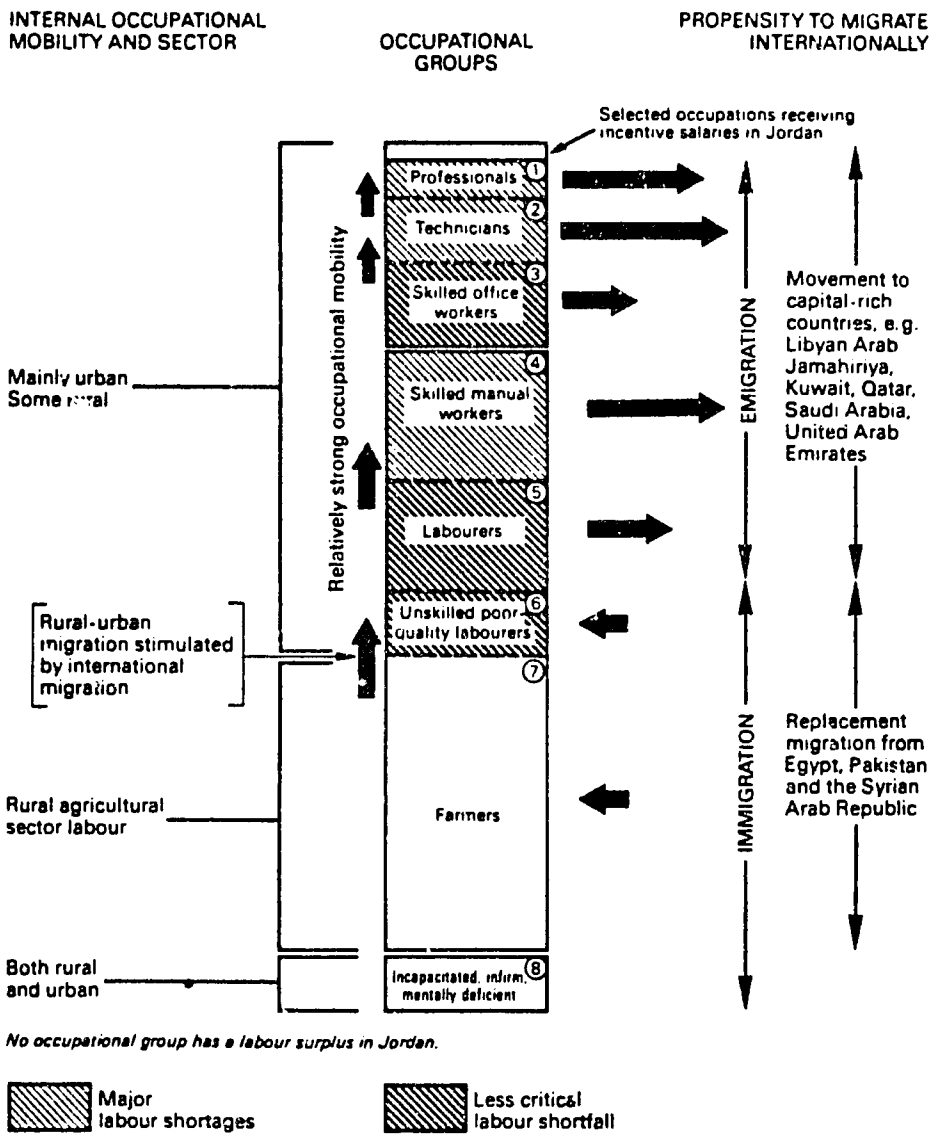
working abroad, and the amount may be considerably higher. This is equal to over 70% of the Jordanian domestic work force. In gross numbers, this is a current outflow of at least 8-10 thousand workers per year (Kirwin, 1982, p. 67). For all practical purposes, the recent migration of workers has been so extensive that Jordan has little unemployment.

Without external employment opportunities, the Jordanian domestic labor market simply could not absorb the supply of workers; without the remittances from abroad, social and economic development projects could not be supported. Recognizing trained manpower as one of its most important "commodities," the Jordanian government embarked on a planned program to expand education and training opportunity throughout the Kingdom. While responding in part to domestic demand, these programs were also instituted to address the intensified need for technical and skilled personnel within the surrounding Gulf region. Training targets are consistently placed 30 to 40% above projected domestic demand in order to address labor migration. Other Arab countries may export oil: Jordan exports trained manpower (National Planning Council, 1976).

One distinguishing aspect of the labor migration in Jordan is that the outflow is not to more structurally developed countries. Thus, the acquisition of higher level skills is not necessarily a benefit that will eventually flow back to the Jordanian economy upon return of the worker. Jordanians find work abroad because local citizens are not available, or because they are either untrained or unwilling to work. The unskilled Jordanian worker basically fills the need for unskilled labor. The skilled Jordanian worker applies these skills on the job, but returns to Jordan without having appreciably added to these skills. There is even sound evidence to suggest that many Jordanians employed abroad are working in jobs below their skill level. Little development, then, in the skill base of the Jordanian worker appears to occur in the host country, placing the full burden on the Jordanian training system to develop these skills (Birks and Sinclair, 1980).

As a consequence of labor migration, the Jordanian domestic economy has suffered skill shortages. One way in which readjustments have occurred is through occupational mobility. As Birks and Sinclair (1980) observe, the Jordanian worker displays remarkable "ability to fill the vacancies of the more skilled workers who depart as migrants. In effect, Jordanians have proved able to move up quickly through higher levels of skill and employment, the less skilled replacing the more qualified and skilled workers who migrated abroad" (p. 92). In part, this is probably possible because of the relatively high level of education obtained by the Jordanians prior to entering the labor force. This is also due to the lack of a rigidly structured labor market. Considerable worker mobility occurs between different skill levels (figure 1).

Figure 1. Labor market migration and internal mobility



Source: Birks and Sinclair. International Migration and development in the Arab region, 1980, p. 93.

A direct training implication of this fact is the provision of greater short-term training and retraining opportunity, preferably at the site of employment.

Another way in which readjustments occur is through the employment of foreign workers. As suggested earlier, substantial numbers of non-Jordanians have found work, attracted by the wage rates and opportunity for work. However, this has not been a "cost-free" trade-off.

Wages have risen, particularly in certain critical skill areas in which trained Jordanians are drained off to the oil-producing region. Moreover, considerable social costs accrue, including substantial investment in training skilled, short-term manpower which is replaced by migrants who only partly compensate for the skill loss. Then too, migration is largely erratic, causing unpredictable effects on the domestic labor market.

The high rate of migration, in fact, creates substantial uncertainty among planners, including those engaged in educational planning. In the first place, there is no clear idea as to what skills are needed in the employing countries and, accordingly, no realistic way of adjusting training within Jordan to address these demands. While the high level of development activity in the oil-producing states has led to the absorption of most of the Jordanians seeking employment, regardless of the skills that they possess, this situation appears to be changing. Not only has there been an economic slowdown, but considerable development effort has been directed to building an infrastructure within the labor-importing countries, and as this infrastructure is developed there is a change in skill needs. There is every indication that fewer unskilled workers will be needed, and that when skilled workers are needed, it will be in selected jobs. This appears to have already occurred in some sectors, as in that of university-trained engineers, where large surpluses apparently exist. The Jordanian educational system, then, will be increasingly faced with the task of training and retraining relatively large numbers of unskilled workers for domestic jobs, while at the same time facing the task of selectively training skilled workers without the knowledge of what skill areas are in demand (Richards and Martin, 1983).

The inability to project, let alone accommodate, regional demands, results in substantial disequilibrium within the domestic labor market and compounds the difficulty of linking training supply to domestic employment needs. Uncertainty regarding the numbers and skills possessed by returning Jordanians, not to mention the uncertainty created by changing economic conditions, coupled with selective labor migration to the Gulf states, makes it virtually impossible to adjust training inflow and output to the needs of the domestic labor market. Added to this, an unspecified number of foreign workers makes training projections a hazardous undertaking. One result is serious manpower supply problems, particularly in skill categories with low substitutability. Another result is an inefficient allocation of resources, manifested by high training costs and potential surpluses of workers in particular occupations.

In sum, the economic and development conditions in the labor importing countries will inevitably continue to influence the number and skill levels of Jordanian workers seeking employment abroad or at home. This distribution will, in turn, influence needs and opportunities for foreign workers in Jordan. Strong interdependencies will continue to exist between supply and demand schedules for workers, particularly in selected occupational categories. The extent to which skill development activities may be judged adequate and responsive to employer needs is clouded by the flux of worker supply from other sources -- the

repatriation of Jordanians, the arrivals and departures of foreign workers, and other factors.

Employers' Perceptions

The study team individually interviewed 24 employers, talked with numerous government officials, and consulted with the directors of organizations representing substantial numbers of employees (Appendix A). The following is a summary of their perceptions regarding the supply of labor, its quality, the training systems, and some of the problems faced.

The supply of trained manpower

There is a generally widespread perception of skill demand and supply disequilibria across a broad spectrum of occupations. A widely held notion is that surpluses exist mainly in fields requiring advanced levels of formal education, often to the point that many individuals cannot find employment. In particular, there appears to be an excessive supply of engineers and doctors, with supply exceeding demand by as much as eight to one. On the other hand, severe shortages of qualified workmen appear to exist at the technician and skilled craftsman level, largely as a result of the exodus of technically trained Jordanians to the Gulf States. The shortfall of qualified foremen and production managers, for example, may be as much as 12 to 14 thousand, forcing employers to hire lesser qualified individuals. In some of the skilled craft occupations, such as plumbing and cement finishing, shortages are perceived as critical, hampering the quality of work and severely distorting the wage rates. The findings of the recent Royal Endowment Study (1982) tends to support labor shortages in technical fields.

Employers attempt to address labor shortfalls in a number of ways. If a few highly qualified individuals can be hired, they are paid considerably more than the "normal" prevailing wage. At the same time, less qualified individuals are hired at a considerably lower wage, and they work in tandem with the more qualified worker, doing the bulk of the rough unfinished work and leaving the finishing tasks or technically complex work to the more competent individual. This not only assures an acceptable product, but labor costs tend to be averaged out to a more acceptable level. Another approach is to hire foreign workers, especially Egyptian workers, because they enjoy a good reputation for their willingness to work and learn, and because of their discipline in following the instructions of their supervisors with accuracy. A few Jordanians, often engineers or qualified technicians, are used to train and oversee the foreign nationals. As an example, one employer noted that he employed 5 engineers, 3 Jordanian technicians and 73 Egyptians. Finally, some employers simply cannot hire adequately qualified individuals and must accept the best that they can find, along with the accompanying poor quality work and low productivity.

Employers generally think that it is the large migration of skilled workers to the surrounding oil-producing region that creates the labor imbalance. Little is known about the kinds of jobs that Jordanians hold abroad, but many employers believe that a large

proportion of individuals accept jobs in the receiving countries, which require less training than they already have, or which have low social status. The consensus is that the wage levels are attractive enough to the Jordanian that he will work whether or not the job is congruent with his qualifications or social sensibilities. But often the Jordanian worker will not perform at home the very work he accepts abroad. Thus, while some employers believe that returning Jordanian workers help to alleviate the skill shortages in some occupations, others believe that there is a great reluctance on the part of the former expatriates to accept available jobs because they prefer higher status jobs -- jobs that are simply not available in large quantities. In any case, there is a "floating mass" of workers of unknown size and skill composition which generates a great deal of uncertainty about future labor market conditions.

Another perception among a number of employers is that while returning Jordanians find work, their level of productivity is not as high as when they work abroad. This phenomenon is alleged to result from changes in attitude toward work. The returning worker has accumulated savings, and his immediate goal is to invest in housing and to find a job that will allow him to live well but work at a slower pace than when employed abroad.

In any case, there appear to be legitimate shortages for certain skills, if shortage is defined in terms of insufficiency of supply to such a degree that a wage level to clear the market would be so high as to render a business operation not feasible. These supply insufficiencies appear to arise more frequently in technical and craft-based occupations. It is these same occupations that are generally looked down upon because of strong and deeply ingrained prejudices against working with one's hands, engaging in agricultural work, or working in certain service fields. The idea of being perceived as a servant or pedlar, or of getting dirty while working, is a strong disincentive to many young Jordanians. While attitudes are changing, largely because of the high pay associated with technical jobs, old prejudices continue to create market distortions. There is some indication that Jordanians will remain unemployed rather than seek low-status jobs. This problem is common in any country, but in Jordan it appears severe, constituting one of the determining elements of labor supply and quality, a question that is discussed in the following section.

Perceptions of quality

There are at least two dimensions of labor quality that employers identify. One is the cognitive dimension as defined by the specific technical skills possessed, including, of course, the balance between theoretical and practical understanding. The second dimension consists of the attitudinal, or affective aspect of behavior, referred to here as noncognitive characteristics.

Regarding the cognitive dimension, employers almost unanimously make a number of important points. Perhaps the most frequently mentioned concern is the uncertainty regarding qualifications. Employees who apparently have had the same level of training may differ

greatly in what they can do. Accordingly, when employers hire a new worker, they have no idea of the qualifications of the individual. In the opinion of many employers, the problem originates in the lack of uniform quality in the training system. There are significant differences between the various training centers and the programs featured in those centers. In addition, some students from a particular program may be well trained, and others poorly trained, but there is no way to differentiate. What is needed, in the eyes of employers, is a standardized way to judge the qualifications of program completers.

Another frequently mentioned shortcoming is that of insufficient practical training and inadequate work experience. Employers attribute this problem to the emphasis on theoretical instruction and the paucity of quality hands-on training.

Regarding the non-cognitive dimension of quality, there is virtually unanimous agreement among employers that worker attitudes, especially towards low-status jobs, constitute a serious obstacle to employment, to the quality of work, and to productivity. The intensity of effort is often low, the level of dedication lacking; employees may not show enthusiasm and they may fail to take responsibility.

Another perception relates to the capacity for teamwork. There appears to be a very individualistic approach to work and a lack of ability to perform as a team member. Inadequate teamwork results in more costly management and supervision, and reduced productivity and profitability. This is a problem that is not only associated with the skilled worker, but also extends to supervisors and managers. In many cases, they may hold engineering or related degrees but lack any training in managerial skills.

The issue of status represents a problem even for occupations that require a high skill level. In one characteristic case, for instance, an engineering position involving the supervision of hotel maintenance was eventually filled by a European, because local engineers considered the work demeaning. A general perception among employers, then, is that emphasis in training or skill development alone is not sufficient. Questions of work status and attitudes also must be addressed.

In sum, from the perspective of employers the qualitative aspect of the training/employment link can be strengthened in several ways: a) training needs to be of uniform quality, with some assurance that trainees possess the same level of competencies; b) there needs to be more emphasis on practical training and work experience; and c) the affective component of training -- the issue of status, the capacity to work as a team, and work habits and attitudes in general -- needs direct attention.

Sources of employees

Although there is a general awareness of training sources in Jordan, there is widespread lack of specific knowledge regarding these sources. Unless a particular employer has hired many graduates from

certain institutions, he is unlikely to have strong perceptions about that institution. An exception is the VTC, whose programs (apprenticeship training and short-term programs conducted with employers) are characterized by built-in linkages.

Then again, skill development is not reported to be consistently among the highest priorities of employers. The need for capital, expanded markets, better distribution networks, and advanced technology, are considerations that may outweigh the immediate concern for skill training.

In the agricultural sector, for example, entrepreneurs mention access to uncontrolled markets as the most important issue confronting them; in construction, a major concern appears to be competition from foreign contractors. It is obvious that productivity improvement through skilled manpower can only be marginally effective if other problems that affect productive activity cannot be addressed simultaneously.

On an individual basis, many employers have established contacts with the Vocational Training Corporation (VTC). They express general satisfaction with the programs. Though the number of workers involved is relatively modest, this development is highly positive, and probably suggests that programs that actively seek employer collaboration, such as the VTC, are much more likely to be effective in the eyes of employers than are programs that remain insular. The major benefits of the apprenticeship program administered through the VTC were perceived to be low training cost, practical on-the-job experience, and flexibility in accommodating different employer needs.

Graduates of the community college system were also perceived as desirable employees, and they ranked along with VTC trainees as the most sought-after individuals. The graduates of the three-year secondary education programs were considered next in level of quality, with the graduates of the two-year trade training centers ranked among the lowest.

Supply-demand linkage

When an employer has a vacancy, he begins the search process, which is highly random and often relies on personal contacts. If the employer is unsuccessful, he is more inclined to attribute this to competition from other Jordanian employers and the migration of workers to the Gulf States, than to seek the cause of shortages in the training system. Then again, Jordanian employers have been able to face shortages of certain skills by hiring foreign workers, most of whom are inadequately qualified but willing to learn. The foreign worker has prevented a crisis that might have caused the employer to become more active concerning sources of domestic training.

There is little evidence that the training system monitors the needs of employers. Linkages between employers and training institutions are almost non-existent, except in the case of the VTC, and while this link is considered effective, only a small part of the labor market

is involved. On the other hand, employers do not actively try to establish links with training authorities, even though the problem of the scarcity of skilled labor is persistent. Their priorities, as suggested, tend to lie elsewhere. However, the establishment and maintenance of effective linkages between manpower, demand and supply is useful as efforts are made to expand and strengthen the training system in Jordan.

Virtually all of the elements of a formal labor market and occupational information system are in place, or are currently being developed in Jordan. These include data collection (through local employment offices, periodic household and establishment manpower surveys conducted by the Department of Statistics, and other sources, such as reports from VTC training officers); standardized occupational classification, with "crosswalks" to instructional programs; job vacancy listings (presumably soon to be computerized); manpower demand and supply projection; and information dissemination through a variety of formal and informal channels. What remains is to institute a system, and to link this system with the training planning mechanism.

On the other hand, questions must be raised regarding how extensive the system should be. While it is true that there is a need for better planning information, the fact remains that it is difficult to develop a good information system. Two decades of experience by planners, world-wide, have shown that most systems have not been very effective. At best, useful, long-term trends are projected. In the case of short-term projections, training institutions probably do not have sufficient flexibility to respond even if the labor market information is reasonably valid. In Jordan, the difficulty of developing useful planning information is compounded by the uncertainty of labor migration as well as a general vulnerability to external economic and political forces. Presently, financial resources may be put to better use than investing in an extensive labor market and occupational information system.

In addition, the Jordanians have pursued a policy that requires minimum labor market information, namely, to extend educational and training opportunity to as many individuals as possible, regardless of the relationship to labor market demand. The decision was to create a trained manpower reservoir that has employment potential, the belief being that skilled individuals will be more likely to find a way to productively use their talents than those that have few skills.

Chapter Three

The Skill-Training Systems

There are four major sources of skill training in Jordan (Appendix B). Formal skill-training programs administered by the Ministry of Education (MOE) constitute the largest single source. Included are two-year Trade Training Centers, three-year secondary vocational programs, and post-secondary technical training in community colleges. The current enrollment in secondary level programs is about 17,700 students; approximately 32,000 students are enrolled in community college programs. The formal skill-training programs are closely linked with the general educational system, with articulation at different levels and integrated policy planning.

Approximately twenty thousand students attend one of the three Jordanian universities. It is estimated that 67,000 students attend a university abroad, a remarkably high number, and one equal to 12% of the domestic labor force. University level training, however, is not examined in this study.

Another source of skill training is provided by the Vocational Training Corporation (VTC), established in 1976 to specifically address in-plant training through an apprenticeship system. The VTC maintains policy and program ties with the MOE, and it is the most rapidly growing skill training source in Jordan. Currently enrolled in the three-year program are 6,000 apprentices, and short-term training courses are provided to 2,000 individuals annually.

Considerable training is also conducted by employers. A number of large firms, such as the Phosphate Company, the Jordan Electric and Power Company, and the Jordan Petroleum Refinery have established training centers. Training at the apprenticeship level is increasingly conducted in collaboration with the VTC, while training for other skill levels is carried out by the firm. The capability of smaller firms to conduct training is a limited one, due mainly to insufficient financial resources and restricted, but nevertheless essential, training needs. Only a relatively small number of individuals may require training at any one time, precluding a sustained, organized training effort. Substantial ad hoc, unorganized, on-the- job training is however conducted by the 6,000 to 7,000 medium and small size firms in Jordan.

A final source of training is provided by programs conducted by various government agencies, the military, and associations and volunteer organizations. The Ministry of Health, for example, conducts programs for training nurses and para-medical personnel. The Army Directorate of training operates a trade program and the General Management Institute offers training to public and private sector administrative staff. These training efforts are usually short-term, they are directed to the specific skill requirements of the agency or target populations, and they vary greatly in content, ranging from literacy programs for older workers to relief programs for Palestinian refugees and high-level executive training for bank officials. These sources of training will not be examined individually in the pages that

follow, because such an examination would lie beyond the scope of the present study. In addition, the area of training may be sensitive, and the training impact minor.

This chapter will examine the characteristics of the formal skill-training structure, the VTC, and industrial training programs. A general description of the various skill-training programs will be followed by an assessment of the effectiveness of these programs in addressing employment-related skill needs. In a final section focusing on formal vocational programs, conditions that directly relate to external and internal program efficiency will be identified.

The Formal Sector

The formal skill-training system in Jordan can be best examined in the context of the educational system in general. The Ministry of Education directs and controls all formal education and training in Jordan. Equally important, though, the skill-training system is closely articulated with general education, and its development parallels that of the total educational system in Jordan. Thus, vocational training shares the most striking feature of all Jordanian education, that of rapid growth.

The past two decades have seen dramatic educational growth at all levels. The ratio of pupil enrollment to population was 2.7 percent in 1957-58, rising quickly to 21.24 percent in 1966-67, and accelerating to 30.7 percent in 1976-77. Presently, almost every third Jordanian is a student, a fact that is hardly surprising when one considers that over half of the Jordanian population is under 15 years of age. In terms of gross numbers of students, about 289,243 attended school in 1967; 611,834 a decade later. Currently, 804,259 students are enrolled in government, United Nations Relief Works Administration (UNRWA), or private schools. (Al-Tell, 1978, pp. 97 and 128; Ministry of Education, 1984; 1983, pp. 50-51).

The expansion of vocational education paralleled this growth, with particularly large proportional increases in the past decade. Enrollments increased from 8.5% of the secondary school population in 1976 to the current 19%. At the same time the proportion of the educational budget increased from 5.7% in 1973 to 7.4% in 1977 to the current 8.7%. However, of the current budget, 4.3% is for community college level technical programs, so that the financial resources allotted to secondary level programs are actually less than those of a decade ago when there were significantly fewer students enrolled in the system. The growth of the community college system, in fact, has been nothing short of phenomenal, expanding in five years from a few institutions to the current 46-institution system, enrolling over 32,000 students in scores of technical programs.

The growth of formal skill-training programs is part of the established effort over the past decade to "diversify" education. Studies conducted through the United Nations and World Bank in the early 1970's showed that the majority of unemployed youth were from academic curricula at the secondary and university levels (Harrell, 1978, p. 21).

At the same time, domestic skill shortages occurred, and following the oil-price increases in 1973, the regional demand for skilled labor intensified. Accordingly, government planners "made the basic decision of increasing the supply of available skills by training new entrants to the work force and upgrading the skills of those already employed" (Harrell, 1978, p. 18). The Three Year Plan (1973-75), and the two subsequent Five Year Plan(s) (1976-80; 1981-85) place primary importance on expanding the skill training capacity of Jordanian educational institutions along with improvements in the overall educational system. This included the rapid expansion of vocational programs to achieve a target of 30% of secondary enrollment by 1985 (National Planning Council, 1973; 1976; 1981).

The rapid expansion of the Jordanian educational system has in general been due to the dramatic population increases discussed in Chapter Two. At the same time, there has been a growing social pressure for greater educational opportunity. As one Jordanian official put it, "everyone has the diploma disease; they want education." Capitalizing on the strong public interest in education, Jordanian planners have aptly structured a vocational training system in parallel with the general program, providing training options at different junctions so that students are redirected into skill training based on their academic progress. While strong work prejudices exist, as discussed in Chapter Two, in many cases the student's drive to obtain more education can only be realized through enrollment in a vocational program.

The formal educational system comprises a number of levels, commonly referred to as "cycles" (figure 1). Vocational offerings are integrated and articulated with these cycles.

The Compulsory Cycle

The six-year elementary cycle, along with the three-year preparatory cycle, make up the nine years of compulsory education. The elementary grades and the three preparatory grades enroll 90.8 and 88.8 of the relevant age group, respectively. These are relatively high figures, and offer an indication of the successful extension of educational services.

The most recent innovation in occupational preparation consists of prevocational activities in the primary and preparatory cycle, the purpose being to provide students with knowledge and "preliminary skills" related to home and community life, the labor market, and selected occupational clusters. At the elementary level, work-oriented activities complement academic instruction; at the preparatory level, each student is required to select an activity, or unit of study, in one occupational cluster, including commerce, agriculture, and industry, with home economics required in the case of girls.

This attempt to link school more closely with home and community life is not unlike the career education movement in the United States, started in the early 1970's. While employment skills are not directly taught, prevocational instruction is designed to develop positive work attitudes, provide the focus for career development, and enrich academic

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traditional instruction is of value; teachers are not sufficiently trained; the schools are not fully equipped for this type of program, and the curriculum is not fully developed; lastly and perhaps most importantly from the practical point of view, the general examination does not cover prevocational objectives, so that there is little incentive in spending time on instruction that will not be tested. It is too soon, however, to conclude that this innovation will be of little value: there is such a strong social bias against manual work that any activity to counter this bias may be useful, even if the results are only marginal at first.

Secondary Level

Secondary education, which is not compulsory, enrolls 67.9 percent of the relevant population, and of these, 94,008 students are enrolled in a general program and 20,549 in a vocational (including VTC enrollment). Based on their performance in the preparatory cycle, students are assigned to one of several streams: a) literary or scientific academic, b) comprehensive, c) secondary vocational (three-year program), or d) trade training centers (two-year program). Students may also elect to enroll in the apprenticeship program offered through the Vocational Training Corporation. Students completing one of the three-year secondary curricula take either the General Secondary Education Certificate or the General Vocational Secondary Examination. Those students who pass are eligible to enroll either in a community college or university program, depending upon their examination score. Only a few students who pass the Vocational Secondary Examination actually qualify for university enrollment (Ministry of Education, 1983, pp. 108, 209, 210).

The trade training centers offer a two-year program designed to train semi-skilled and skilled labor. Students are admitted mainly on the basis of the compulsory level examination score, with program preference and availability of openings also taken into consideration. The TTC basically attracts low-achieving students who cannot get into a three-year secondary program, and instruction is designed to lead directly to job placement upon completion. Roughly 70% of the coursework is practical, and 30% theoretical. There are 30 industrial training centers for men and 28 craft centers for women run by the MOE. One center is run by the UNRWA, and two are privately run. The total yearly output is around 1,800 trainees, with perhaps 35-40% female (Ministry of Education, 1983). Students are awarded the Certificate of Trade Training upon completion of the program.

This program fills an educational gap, offering formal training for those students who cannot go on to get a three-year secondary diploma because of poor academic performance, but who do, nevertheless, wish to pursue some type of training beyond the compulsory school years. It is, however, considerably less prestigious than the higher levels of vocational training, and is chiefly a producer of semi-skilled and skilled labor. Although the program is designed for job entry, no practical, direct, on-the-job experience is provided. Then too, this same weakness is reflected in the instructional program with little, if any, contact with industrial work sites. Finally, equipment is usually

sparse with some instructional laboratories in markedly poor physical condition.

The Craft Center is the female equivalent of the Trade Training Center, offering instruction in sewing and beauty culture. As Harrell (1978) observes, "these fields have the dual advantage of appealing to the girls -- and their families -- first, insofar as the practice of the craft may be out of the home, and secondly, because they answer a real market demand" (p. 30). Craft Centers are considered to have higher prestige than their counterpart for boys, the Trade Training Centers, even though the girls who enroll are at the bottom of their preparatory classes.

The next level of training is available through secondary vocational schools. The students admitted have done well enough in the preparatory cycle to enroll in a three-year secondary program, but they have generally not scored high enough to enter one of the two academic streams, although some students with high academic records do select a vocational option. Programs are offered in separate industrial, commercial, agricultural, postal, hotel administration, or nursing schools. One recent trend, however, is to establish combined general vocational secondary schools that unite in a single institution programs formally offered in separate schools; another trend is to establish comprehensive secondary schools accommodating more than one stream. Students who elect the academic stream in the comprehensive school also take training in a vocational area of their choice, although this only constitutes about 5-10% of the total instructional time.

Students completing one of the secondary vocational programs are eligible for admission to one of the Jordanian community colleges or universities, if their examination scores are high enough. In actual practice, over 50% of the secondary vocational students enter directly into the labor market at the skilled labor level. The total annual output from the secondary vocational schools is about 4,600 trainees, with 2,600 students from the commercial specialization constituting the largest segment, followed by 1,350 students from the industrial specialization.

The vocational program usually consists of roughly 45% practical, and 55% theoretical and general work. In the case of industrial secondary schools (ISS), students spend the first year rotating through different vocational areas; one trade area is then assigned to the second and third years. In the summer months, students are placed with employers to gain on-the-job experience. Although TTC and ISS students receive about the same number of hours of practical training (roughly 2,300 hours), the greater amount of theoretical and academic work is thought to give the ISS student more flexibility to undergo additional technical training or to pursue formal education. In any case, the six ISS schools face serious overcrowding, largely due to the planned expansion of vocational education. Two daily shifts are common, and in some schools TTC sections have had to be discontinued. Furthermore, with the passage of time, there is deterioration of the facilities and their equipment, while supplies, which were insufficient to begin with, are short. Then again, curriculum materials are limited, due in part to

repeated budget restrictions, but also to the fact that the centralized Directorate of Curriculum Development has not been able to meet the system-wide need for curriculum materials. While a competency-based instructional format has been designed, only a small percentage of the required instructional materials is available.

Female enrollment is concentrated in commercial fields, where it comprises about 50% of the total enrollment. Although enrollment in nursing is exclusively female, only about 17% are actually employed, largely because nursing is considered similar to domestic service, and therefore demeaning, and because the inevitable contact with males in the course of work would run counter to religious tradition. Training for postal work is the third field with large female enrollment, but it also has similarly low placement rates for the same reasons. Girls are simply assigned to these fields on the basis of their grades.

There are few training opportunities for females in industrial fields, even though a growing number of females are finding jobs as operators and limited skill workers in manufacturing and food industries. On the other hand, the enrollment of males in the agriculture and hotel management fields is low, 308 and 305 respectively, largely because of the low status of those fields even though substantial employment opportunities do exist.

The Community College System

For those secondary students who complete one of the three-year academic (scientific or literary) or vocational programs, admission to one of the 46 community colleges is based on a score of over 55 on the secondary certificate examination. Public supported colleges "cream" the student population, offering admission and "fellowships" to students scoring the highest on the general secondary certificate examination. Program admission is also based upon this examination, so that many students end up enrolled in a second, third, or fourth career choice. Students not selected by a public institution attend private institutions.

There are approximately 60 technical specializations offered among the different institutions, ranging from accounting, social work, and electronics, to teacher training and computer science. Although the yearly input to students in the total community college system is around 20,000, only about 7,800 annually complete the two-year program with a passing grade on the comprehensive examination (Abdel Rahim, 1984). This high attrition rate is probably due in part to the fact that the community college is a place where students can test their aspirations against career realities.

The major function of the community college is to prepare middle level manpower and skilled technicians for government and private sector employment. Students cannot matriculate from a community college into a Jordanian university, although many students do gain admission to a foreign university on the basis of their community college record. While there are no reliable follow-up data, the widespread perception is that graduates enjoy high placement rates due to the level and quality

of training received. A community college certificate provides immediate entry to many oil-producing area jobs. Employers in general express satisfaction at the quality of community college graduates.

The most rapidly expanding source of skill training for women is the community college. Over 40% of the enrollment is female, or about 14,500 students. The two main areas of enrollment are education and commercial subjects. Increasingly, however, more women are enrolling in technician level industrial training courses, even though the numbers are small (400 students). The high enrollment of females is attributable largely to the fact that education has recently shifted from an occupational field dominated by men to one employing increasing numbers of women. Out of 9,100 individuals enrolled in education curricula, 7,700 are women. Also, females attending public community colleges have direct access to government employment where restrictions on women working appear to be considerably lighter than in the private sector. Finally, it is interesting to note that only 17 students, all male, are enrolled in agriculture (Ministry of Education, 1983, p. 232).

The rapid growth of the community college system has been accompanied by the problem of maintaining quality. Indiscriminate admissions resulted in poor academic performance; stretched budgets resulted in less overall program support; and a proliferation of programs resulted in the inability to monitor instruction. There is general overall agreement that expansion should be held in check, poor programs weeded out, the quality of students carefully monitored, and instruction uniformly improved. Particularly perplexing are the problems of hiring and maintaining staff, aggravated by competition with private sector employers and limited resources. Nevertheless, the community college system will continue to play an instrumental role in manpower development. Its ability to address skill development needs will be examined in more detail in the next chapter.

The Vocational Training Corporation

The siphoning off of skilled workers to the Gulf States in the first half of the 1970s, coupled with the emergence of large numbers of young people with limited job skills, raised alarm among planners and employers alike. National development plans required thousands of skilled and semi-skilled workers at a time when rapidly expanding economies in the oil-producing region were draining these very workers from Jordan. Large numbers of low-skilled, underemployed and unemployed youths portend future problems and aggravate present ones. Furthermore, all this was being realized at a time when the country was trying to absorb thousands of arriving Palestinian refugees. As explained earlier, the government of Jordan had to deal with the problem by quickly expanding and qualitatively improving the vocational education programs. The MOE was accordingly given this task, and an Industrial Education and Training Section was established in 1974. Two major problems were encountered, however: time and money.

Formal programs would take several years to establish, and it would take even longer to produce graduates. The construction of permanent facilities was costly and time-consuming. Out of necessity,

planners turned to industry. Various experimental training forms were attempted (sandwich courses, block-release, day-release, among others), using in-plant facilities and existing resources.

Out of these early experiments, the current Apprenticeship Training Program (ATP) evolved, which combines supervised in-plant training with formal instruction. The planning unit that was to become the VTC was formally moved out of the MOE in 1976 and was made autonomous with the passage of the Vocational Training Organization Law. Nevertheless, functional links remain with the formal educational system (International Labor Organization, 1973; 77; Harrell, 1978).

As in the case of the Trade Training Centers of the MOE, trainees are generally selected from students who have completed compulsory education but who have a poor academic record and cannot gain admission to the three-year industrial secondary school. Similarly, the same technical and general education curriculum is followed, and trainees are awarded the same Certificate of Training upon completion of training. Finally, like TTC students, trainees enter the labor market as semi-skilled or skilled labor. But the Apprenticeship Training Program is three years in length because of the extended time given to on-the-job training, and skill training mainly takes place at the worksite.

The Apprenticeship Training Program is fundamentally a cooperative work-experience program combined with conventional apprenticeship training. Following an initial six to ten weeks of preparatory instruction, students are placed on the job. Ideally, three days of employment are followed by three days of instruction, either on the job site or at a training center, depending on the size of the employer. In practice, the pattern may be five days on the job, and one day of formal instruction. The formal instruction is divided equally between general education, theory related to the skills being learned, and practical work. Students receive wages, increasing to the full apprentice wage in the third year, which consists of full-time, on-the-job training. Throughout the training period, a training officer maintains a liaison between the job site and the formal instruction, and in the case of large employers, a representative of the VTC may be assigned directly to the company.

The VTC has made significant inroads, since it is currently working with over 1,000 employers and turning out 2,000 trainees annually. Program intakes are expected to increase to 4,000 by 1986. In general, trainees are desired by employers, they learn job skills appropriate to their skill level, and, in most cases, seem able to find work. The original objectives, providing trained manpower and addressing the skill-training needs of youths, have been ably met.

The VTC also provides short-term training for youths and adults. For those students who do not complete the compulsory cycle and who may best profit by work, short-term training coupled with job placement is offered through the VTC. Training may immediately precede job placement, and it may continue at short intervals while the individual is employed. Instruction is directly coupled with work, in order to

develop the skills required for the individual to successfully perform daily on the job. Roughly 2,000 are enrolled annually in this program designed for semi-skilled labor, the lowest skill level for which formal instruction is provided. In general, the program is considered highly successful, mainly because of the prior preparation before placement, the close connection maintained between initial training and placement, and the periodic monitoring of the student. There is some thought being given to developing a six-month formal training program for this category of student.

For adults already employed, the VTC offers short courses for upgrading purposes. Initiated in cooperation with employers, these courses are designed to bring the worker to the limited skill or skilled level, thus increasing worker efficiency and productivity. As briefly discussed in Chapter Two, adult retraining may be an area meriting greater attention, in part because of the substantial occupational mobility within the domestic labor market, and in part because of the need to upgrade returning workers.

Major problems requiring attention include improving the quality of training received at small employing establishments, strengthening the theoretical aspects of instruction, and developing a method to more effectively "match" students with potential placements. These problems will be examined in more detail in the following chapter, along with an analysis of the reasons why the VTC is an effective skill-training mechanism.

Employer-Based Training

As in the case of virtually all countries, considerable training occurs within industrial firms. A number of large firms have organized training programs for a variety of work levels. Others rely on either foreign or Jordanian training sources. Smaller firms, on the other hand, tend to rely on informal, unsystematized, on-the-job training, and they compete intensely with similar firms for domestic labor.

The Jordan Petroleum Refinery probably operates the best training program of any industrial establishment. The Jordan Electric Power Company, the Jordan Cement Company, and the Jordan Phosphate Company provide other examples of excellent, comprehensive training programs. Of the large employers, certain common characteristics are shared. In the first place, they have adequate resources. Training departments are established and staffed with specialists, and training is an ongoing, integral activity of the firms. Training is considered an important management responsibility, one that can help assure high quality and productivity levels. Again, training is considered essential in countering labor turnover rates as high as 25% annually. Training is also highly specific to the machines and processes used in the firms. And, finally, individuals tend to be hired at given skill levels, trained, and promoted within the firms. In other words, the firm has an internal labor market, supported and developed through training programs. These usually address all skill levels within the firm, except that of unskilled labor. Generally speaking, graduates are hired from the formal training institutions at levels that correspond to

their level of training. Community college graduates, for example, are hired at the technical level, and ATP participants at that of skilled labor. For new entrants, a short-term introductory course is usually given, followed by periodic and regular training sessions. Promotion and rank may be associated with the successful completion of prescribed training units (see Appendix D). Annual training plans may be formulated by establishing objectives for all work levels.

There is a generally wide use of competency-based, modular instruction. There is considerable recourse to foreign instructional materials, but these are usually adapted by the firm to fit a particular training format; most materials have to be translated into Arabic.

A major source of technical information is provided by the foreign parent corporation, companies that specialize in instructional materials for a particular industry, manufacturers of specific equipment, or foreign technical experts. Shell Oil, for example, supplies advisors to the Jordan Petroleum Company, and the Jordan Cement Company makes extensive use of manuals provided through a Swiss-based company. Key personnel are often sent abroad for short-term training, or, in many cases, resources within Jordan are used, such as the Jordan Institute of Management. In general, however, technicians and skilled workers are trained in-plant. This is considered expedient, in view of the need to address the specific production techniques of the firm, and to overcome the inadequate preparation obtained through the formal training system.

Employers face a number of problems. Not only do they have to train for their own needs, but, as previously mentioned, they supply trained and experienced labor to the greater Gulf region. Continuous training is required to replace rapid personnel turnover. Of the approximately 25% who leave annually, fully 68% may be at the technician or skilled worker level and 20% at the administrative. This dramatically increases training costs. In a real sense, the firm is producing not only a material product, but also human resources for export, thus performing a "public service" role which benefits society at large in addition to the individual company -- an arrangement which must be tolerated, if not actively supported, by the companies involved.

Another loss of skilled manpower occurs when young trainees are called up for compulsory military service, an event that usually occurs at the end of training. The employer thus tends to lose track of the trainee, who has probably reached a skill level that can be readily sold to one of the oil-producing states. At worse, the employer loses a potentially productive employee, at best, training and work continuity are disrupted.

Except for the few large firms which maintain training departments, a variety of training activities is conducted on an ad hoc basis, especially among medium-size and smaller firms. Training is often improvised to fill an urgent and specific need. This may range from short-term, low-skill training under direct job supervision to more organized and structured forms of training. In the case of smaller employers, they often need to train only one or two individuals in highly specific skills: not a great enough demand to require an

organized training program, but yet a skill need that requires attention.

A particularly important source of technical knowledge for smaller firms is represented by individuals who have received overseas training, either in a formal institution or within a firm. The individual, often an engineer, brings knowledge back to the Jordanian firm that is directly transferred to work processes. In this way, a critical need is addressed, that of acquiring current technical know-how. An additional source of technical knowledge and skills for smaller firms is provided by manufacturing agreements. A Jordanian firm manufacturing plastic products, for example, bought the machinery and product rights from a German company. As part of the package, three of the company employees were trained at the parent company. These individuals were in turn used to train Jordanian technicians and Egyptian workers.

As in the case of large companies, training and the search for new employees form a continuous process due to high turnover rates and the outflow of domestic workers to the oil-producing region. But the success or failure of smaller companies in retaining skilled workers is a more crucial factor than it is for the larger companies, since the loss of one key individual can cause serious work disruptions. The ability of the firm to produce may depend upon one or two skilled individuals in critical jobs. Similarly, the initial recruitment of skilled workers is a matter of greater concern to the smaller firms which do not generally have the resources to provide training, especially at the higher skill levels. Again, small firms tend to rely heavily on formal sector training programs for individuals who at least have the foundation skills on which productive, on-the-job training can be structured.

Substantial use of on-the-job training is, in fact, made by small firms with limited resources and modest training needs. An added advantage of this type of training is presented by the fact that the trainees are immediately productive. Obviously the advantages of OJT ensure its continued, wide use. There are, however a number of potential hazards. A heavy reliance on this method tends to lead to a deterioration in the work force. OJT is a static approach to training. If incumbents responsible for training new employees do not have the opportunity to upgrade their own work skills regularly, or if the employer does not use recent production technology, the skills of the incumbents become outdated, and this built-in obsolescence becomes transferred to new employees. OJT requires a way to introduce new skills into the existing work force on a regular basis.

Another constraint is that the novice trainee is "hostage" to the incumbent worker, who may or may not teach the full range of skills required to perform optimally. In many situations where there is intense job competition within firms, or a lack of employment opportunity in general, or significant wage differentials between work levels, OJT may be a particularly inadequate source of training. Incumbent workers will be highly reluctant to teach new workers who may represent a potential threat to their job security. One of the more pressing training priorities, then, is the need to provide a way for small firms to infuse new technical skills into OJT. New entrants

from formal training programs can bring new knowledge, but there is little evidence to suggest that present programs have the capacity to stay abreast of current technology and to impart these skills to trainees.

Analysis

The skill-training systems in Jordan are still in the process of evolving, having grown rapidly in the past decade. Further changes are occurring at a rapid pace, and will no doubt continue to occur in the near future. These changes are a response to economic, social and political pressures. They are also a result of conscious policy on the part of Jordanian planners to better address skill needs and to respond to the increased social demand for educational opportunity. Priorities have shifted substantially in just the past few years. But how effective have the training systems been in addressing employer skill needs?

This analysis will mainly concern itself with secondary level programs. The Vocational Training Corporation and the community college system will be examined in detail in the following section, although they will also be mentioned for purposes of illustration and contrast in the present chapter.

One way to gauge the importance of skill training is to speculate about the possible effects of its absence. Would economic development and social progress have advanced as much without the establishment of these skill-training sources? There is little doubt that formal skill training has been highly important. Without it, it is probable that fewer Jordanians would have been able to secure jobs in the Gulf area, and they probably would have had lower-level jobs. Domestic manpower needs have been addressed, albeit with limitations. And the benefits of providing greater economic and social opportunity through training are incalculable at a time of political uncertainty, rapid population expansion, and domestic dislocation. Although a few large companies have ably demonstrated that they can establish high quality, functional training programs, the great numbers of medium-size and small Jordanian employers rely heavily upon domestic skill-training sources to supply individuals who possess a foundation -- however imperfect and limited -- of technical skills.

Quantitative factors

Yet another way to gauge the importance of skill training is to examine the extent to which existing skill needs are being met through the training sources. Are employers able to hire a sufficient number of adequately trained employees? In order to address this question properly, some perception of existing as well as projected labor requirements is essential. Unfortunately, precise information on labor demand is lacking, not only for the future, but even for the present. There is no documented picture by occupation of current employment and fields of shortage or surplus, nor are there credible estimates of the future occupational demand for one, three, or five years hence. The Royal Endowment Study (1982) has documented skill needs in 740 of the largest employers (those employing 20 or more workers), but these data

are not fully compiled and there is little indication that they will be used for planning purposes. Similarly, recent efforts to document occupation demands have been made by the Department of Statistics and the Ministry of Labor, yet no comprehensive system of manpower projections is established.

As suggested in Chapter Two, the whole question of supply-demand linkages for manpower skills is conditioned in Jordan by the extremely high variability of its domestic labor force. Nearly half of all Jordanian workers are employed outside the country at any given time. About one-fourth of the work force inside Jordan is made up of foreign workers. Temporary out-migration of Jordanian workers to other countries, and their return migration to Jordan, heavily influence the supply of skilled workers in Jordan. In-migration and out-migration of foreign workers similarly affect the number of skilled workers available to Jordanian employers. This ebb and flow, conditioned by a host of economic, social and political considerations, diminishes the relative importance of skill development activities as a determinant of skills balance in Jordan, and makes planning activities problematic at best.

Lacking basic data, and in any case unable to make reasonably useful projections, planners have based training supply more on social demand and existing training capacity than on considerations of labor market demand. As previously suggested, program enrollments in the formal educational sector are largely determined by the outflow, at different levels, of students who cannot continue on the academic streams because of low grades, but yet have the desire to pursue additional education. Scheduling into specific skill areas is largely based upon the existing training capacity, regardless of whether there is any relationship between enrollments and existing labor market needs. Even in the case of the VTC, the number of trainees placed with the larger employers consistently exceeds by a large number the ability of the participating firms to absorb program completers.

There are scattered but ample data to suggest that both short-term and long-term labor imbalances exist, although the exact nature and extent of these imbalances are difficult to establish. The considerable ability of Jordanian workers to fill the vacancies created by the departure of better-skilled workers has, as was shown in Chapter Two, helped prevent critical skill shortages in some areas. Foreign immigrants have moved in to fill labor market gaps, although this has primarily occurred in the less skilled areas. And no doubt training programs have helped to minimize the disruptive effects of the selective loss of skilled manpower. Nevertheless, in some skill areas, particularly at the skilled technician level, shortages do exist, imposing burdens on the economy in the form of large and persistent supply-demand imbalances. On the other hand, there is, in some skill areas, a large and growing excess of trained manpower, a condition which represents a poor allocation of resources, increased training costs, and potential surpluses in various jobs. Clearly, then, a major challenge for planners is to achieve a better supply-demand balance. Any planning, however, must embrace the uncertainties of the regional labor market.

Qualitative factors

The development of a training system is a difficult proposition, but it is not as difficult or as complex as the task of attaining and maintaining high standards in the system. It is one thing to produce adequate numbers of new employees, but quite another to produce individuals who are sufficiently trained.

As outlined in Chapter Two, Jordanian employers have identified a number of deficiencies associated with recently trained labor force entrants and the associated training programs. It is much too early to take the final measure of the effectiveness of the training system, but a number of current and potential problems are nevertheless evident.

Innovation and rapid growth can, of themselves, bring about problems. The expansion of the formal training system has been extremely rapid, stretching both financial and human resources. The government expenditure for education, for example, has risen in the past decade from 7.2 to 8.2 percent of the total national budget (excluding the Military). And the actual outlay for education has been considerably more, since approximately 22 percent of all students attend UNRWA, and 8 percent attend private schools. On the other hand, during this same period, education at all levels has rapidly expanded, so that what appears to be an actual net overall increase is really a net decrease in the amount of expenditures per pupil (Ministry of Education, 1984, p. 13). Nowhere is this more evident than in the case of vocational education. Secondary vocational enrollments as a percentage of total enrollments have increased over the past decade from about 8% to the current 19%; at the same time, for vocational education the percentage of the total educational budget remains at about 8.7%. But included in this figure is 4.3% for community college level support (Ministry of Education, 1983, p. 8). The result, as discussed earlier, is that financial support for secondary level vocational education has significantly dropped, while at the same time enrollments have more than doubled. Financial support has not kept up with growth; the system has simply expanded faster than the ability or willingness of the government to support it.

Jordan, then, is following a pattern of institutional development that is common within developing countries, but one that does not bode well for maintaining program quality: institutions are established, but the required recurrent expenditures are not budgeted to maintain the system. The result is a rapid deterioration in facilities and equipment and poor quality training. Moreover, support from donor agencies is often used to build facilities, when in fact operating budgets are so limited that the facilities cannot be properly equipped and maintained. The formal vocational training system is relatively new in Jordan, but there is substantial evidence to suggest that deterioration has set in. With existing levels of support, this deterioration will probably continue until another round of donor support can be secured.

The formal vocational system has also suffered from a shift in priorities. Both the VTC and the community college system have experienced marked growth, drawing away substantial resources that could otherwise be used to upgrade and maintain secondary level programs. But even these institutions show evidence of overextension. Recognizing this fact, the MOE has recently emphasized "improving the quality" of education, sensing that the period of rapid growth may perhaps be coming to an end (Ministry of Education, 1984).

The limitations imposed by budgetary restrictions are compounded by comparable deficiencies in human resources. Staff shortages are reported at all levels of vocational and technical education. Although instructor positions are filled, they are often occupied by individuals who are not properly qualified. In 1979-80, for example, 92% of the secondary level teachers were not qualified according to standards established (National Planning Council, 1981, p. 237). Adequately trained vocational and technical instructors are simply not being released in sufficient numbers to meet demand. While Amman Community College (formerly Marka-Amman Polytechnic), the major source of trained secondary level vocational instructors, has increased teacher admissions, these increases are not sufficient to meet current demand. In addition, qualified instructors possess skills highly valued by industry: a combination of theoretical, practical and organizational skills that command high wages in the domestic labor force, perhaps two or three times as high as those of an instructor -- and even higher in the oil-producing region. Public institutions simply cannot compete with the private sector in this regard. Even the VTC, which pays higher wages to its instructional staff, experiences significant shortages.

These shortages lead to several detrimental results. In the first place, it is difficult to maintain program continuity when staffing is in a state of flux. Similarly, when instructional staff view teaching as a temporary stepping-stone to a higher-paying job in the private sector, there is little incentive to maintain or improve the program. Existing facilities and equipment are used, but are not repaired; students are "taught" with the minimum of effort, and little attention is given to instructional development. At best, the status quo of the program is maintained, but what often happens is that the program loses substance with each new instructor.

Then again, unqualified staff simply lack basic skills, the most important of which is probably work experience. Instruction does not usually relate well to industry, if the instructor does not have practical experience. Even graduates of the teacher preparation program at Amman Community College probably do not have enough prior work experience. Another major source of teachers is represented by ISS graduates, and even though individuals are required to have industrial experience before they can teach, this experience may be limited. In any case, large numbers of individuals are hired without the required experience. Then too, unqualified staff lack teaching skills and, what is equally important, the ability to organize and manage an instructional laboratory. The result is poor instruction, along with laboratories that are poorly maintained and fall into disrepair.

Finally, the tendency to hire graduates of a program to teach in the very same program can have negative results. Any deficiencies are more or less passed along from instructor to instructor. The community colleges make heavy use of their own graduates to staff programs. And as indicated, ISS graduates are used to staff TCC and ISS programs.

A priority appears to be the strengthening of teacher training, both in terms of the output of programs and the quality of preparation. Major emphasis needs to be put on greater practical work experience, teaching skills, and methods of organizing and managing an instructional laboratory. Surprisingly, given the large number of unqualified instructors and the large turnover of staff, upgrading courses are almost non-existent. Periodic, short-term refresher and upgrading courses therefore need to be provided.

The curriculum development process is highly centralized. The Board of Education has the ultimate responsibility for curricula, and its 16 members include representatives of vocational education. In actual fact, the Directorate of Curriculum plays the greater role: it prescribes standards, establishes the curriculum framework, and coordinates development, including all preparatory, secondary and community college vocational offerings. Even the VTC coordinates curriculum development with the Directorate, since the apprentices follow the same general and technical curricula as those of Trade Training Center students. Thus the potential leverage of the Directorate over the quality and content of vocational and technical instruction is considerable. Although greater cost-effectiveness and standardization can be achieved, it is also true that rigid and incomplete curricula can emerge, which are incompatible with the skill requirements of the industrial settings in which the students are placed.

Curriculum development is carried out through a committee comprised of training institution members, industrial representatives and representatives of the MOE. The actual writing is usually done by knowledgeable instructors. A prescribed format is used, and this is usually the modular, competency-based approach currently widely in vogue. Occupations are partitioned into tasks, and tasks are grouped into related clusters that comprise a module. A module specifies the general learning objectives in terms of student outcomes and it is organized around the required knowledge and manipulative skills of the specified tasks.

Once a judgement is made about the modules, the instructional material may come from any number of sources, and it is often "adapted" from other instructional materials. Little, if any, of the material comes from a systematic analysis of work skills at job sites. Any relevancy to actual job skills depends almost solely on the knowledge and skill of committee members, casting serious doubt on the practical relevance of the materials developed. One of the major strengths of a competency-based approach to instructional design is the initial analysis of job tasks at work sites. This establishes content validity, but the process now used completely bypasses this critical step.

Curriculum development, moreover, is a time-consuming and expensive process. Given the current resources of the Directorate of Curriculum, it is virtually impossible to address existing instructional needs. Only 25 modules, for example, have been completed to date. At the current rate of production, instructors will never have sufficient modules. It takes a minimum of 12 months to create, review and approve a module, and at least 15 months for a complete text. And technical materials must be revised every three to five years. There are simply not enough resources now, and there probably never will be, to complete the comprehensive coverage envisioned. In the meantime, the highly centralized and controlled process prevents exploration, at the institutional level, of alternative means to establish a functional relationship between employers and the instructional design process.

In the absence of quality instructional materials, the knowledge and practical experience of the instructor becomes crucial. The instructor can compensate for, indeed, he can counter, inaccurate and outdated materials. However, as previously indicated, serious shortages of qualified instructors restrict this opportunity, so that the combination of unqualified instructors and insufficient instructional materials work together to severely impair program quality. This is a problem that permeates the formal vocational training system, and to a lesser degree, even the VTC.

To identify the serious constraints facing the formal vocational system does not imply that it is unproductive. The high percentage of secondary students served, currently around 19%, is almost double the typical vocational enrollment found in most developing countries. Moreover, young Jordanian workers are valued for their educational level in general, with a 72% literacy rate high among Arab states. It is the combination of general and technical education, albeit imperfect, that produces trainees who are versatile and able to undergo further training, and who are sought after by domestic and Gulf State employers alike. But unless the constraints facing the formal vocational system are directly addressed, it will be difficult for it to sustain the considerable momentum created during the past decade.

Chapter Four

The Vocational Training Corporation and the Community College System

The groundwork for Jordan's skill-training systems was laid during the 1970's. The initiative for the overture was taken by the Ministry of Education, and in a few short years an extensive system of secondary-level vocational training was established. The system continues to expand, playing a vital but restricted manpower development role. Presently, however, the training institutions emerging as the focus of attention are the Vocational Training Corporation and the community colleges. They will probably dominate the training scene for the remainder of the decade because of the priorities that they address.

In the case of the VTC, the trainees are basically low academic achievers, and while they have completed the compulsory education cycle, they cannot for the most part go on to complete a secondary level diploma because of their poor academic performance. The VTC's Apprenticeship Training Program (ATP) offers a way for individuals to gain a Certificate of Trade Training while being employed at the same time, albeit at a modest wage. Trainees who complete the program enter the job market as semi-skilled or skilled workers, a job level that experiences low prestige but high labor market demand in Jordan. Perhaps as many as 70 to 80 thousand skilled and semi-skilled workers will be needed in the next five years. Not only does the ATP attract students whose upward educational mobility is limited, but it supplies the labor market with a level of workers generally in short supply, relieving the Jordanian employer from the need to scour the ranks of unemployed domestic and foreign workers.

The community college system basically attracts students who cannot get into a Jordanian University, but do not wish to forego "college." It trains technicians, a critical job level in a developing country. Thus, the community college system occupies a potentially crucial place in the development scheme of Jordan.

Both institutions have, however, experienced rapid expansion. This accounts, in part, for the remarkable resiliency that they exhibit; it also accounts for some of the problems that they face. How the leadership reacts to the political, social, and economic pressures surrounding them, and how the leadership perceives and reacts to its mission, will determine the ultimate success of these institutions. Presently, they offer instructive lessons.

In this chapter, both institutions will be examined. After a brief overview of their operational features, two questions will be addressed: What makes these institutions successful in meeting employer skill needs? What are the limitations and problems faced?

The Vocational Training Corporation

The Vocational Training Corporation (VTC) has rapidly expanded since its organization in 1976, a fact attesting to its success, and indicating the pivotal manpower development role envisaged for it in the Jordanian economy. Between 1977 and 1980, 1,500 individuals received training under the apprenticeship program (ATP), and another 1,500 enrolled in various short courses. By 1983, the annual output of the apprenticeship program reached about 1,000 trainees (National Planning Council, 1980, p. 295; Ministry of Education, 1983, p. 209). Currently there are about 6,000 enrolled in the three year program, with an annual output in the range of 2,000 trainees, and another 2,000 enrolled in short courses. The 1986 intake is expected to reach 4,000 for apprentices, with plans to increase the yearly intake to 7,000 by 1990. Clearly, then, the VTC is expected to play an increasingly important manpower development role, surpassing, and to a certain extent supplanting, comparable programs in the MOE.

Description

The apprenticeship program includes very little that is new. Rather, it is a combination of elements from other training schemes. As Munter Masri, the Director General notes, "we studied training programs in other countries and took from them elements that best served our purposes." However, what is new is the juxtaposition of these elements: a training institution has been created that interfaces with industry while still retaining ties with the formal educational system. At the same time, different program elements are combined to create a highly functional training system. Major elements of the APT include the following:

- Contracts are drawn up with employers specifying the number of apprentices to be trained, wages, and type and length of training. In most cases, neither the employer or apprentice is obligated to continue the relationship after training is completed.

- All potential apprentices are interviewed by the employer before being accepted. They then undergo a two to three-month orientation under the guidance of the VTC.

- The apprentice is assigned to a work group, and is supervised by a fellow employee. This person is usually a foreman who has been trained by the VTC.

- Practical training is gained through work experience. Theoretical and general instruction is given separately. In the case of large firms, it is given within the firms by an instructor of the firm. In the case of smaller employers, apprentices return to a VTC center one to three days per week.

- The technical content, although worked out in collaboration with representatives of industry, is determined by the VTC and MOE. In the case of trainees placed with small employers, some practical training is offered at the VTC to compensate for inadequate instruction given on the job.

- A key factor to successful training, both in large and small firms, is the training officer. This individual supervises instructors, provides liaison with employers, and negotiates training agreements. In the case of larger employers, the training officer works directly with the in-plant instructor, making sure that the educational as well as training objectives are met. In the case of small employers, the training officer works between the employer and the off-site instructor. At the same time, the training officer monitors the progress of the trainee on the job, and works with the employer to address any job problems.

- Two years of formal instruction combined with practical on-the-job training are followed by one full year of work experience. Apprentices take the Trade Training Certification examination upon completion of training.

But the characteristics of the APT also result from the conditions faced by Jordanian planners. As shown in Chapter Three, concern over high training costs, and the ability to respond immediately to training needs, prompted planners to seek answers within industry. Since it was considered too expensive at the time to build, equip, and staff the required training facilities, and since it was considered necessary to begin immediately to turn out trained workers, it was decided to use the facilities and the work environment of employers for training purposes. The result was that instead of orienting training to a school setting, the ATP program was oriented to direct employment. The technical and skill training given is directly related to the specific job held by the trainee. The trainee is considered an employee first, and a trainee second; similarly, instruction is designed to address job performance rather than more general outcomes.

Cost savings have been achieved by the government because employers contribute more than one half of the training costs at the present time in trainee wages, instructor salaries, and the use of in-plant training facilities. These amounts vary according to the size of the employing establishment and the ability to pay. Then again, the VTC has considerably less need for its own training facilities, although the present trend seems to be toward the construction of more permanent, central facilities.

It should be noted, however, that the unit capital cost for MOE and VTC vocational programs is about the same. The annual recurrent cost per trainee TCs operated by the MOE is about 50-60% lower than in TCs operated by the VTC, and TCs operated in industrial establishments have very high recurrent costs, running as much as four times as high as those in comparable MOE programs. These differences probably reflect the availability of resources. There are simply fewer resources available to MOE programs. But these differences are also a result of economies of scale. Programs run in industrial establishments tend to have small groups of trainees.

A direct response to employment needs has been achieved because, once installed in a job, the trainee quickly becomes productive while learning yet more job skills. The system, then, markedly shortens the time between the need for productive workers and the delivery of such workers. Moreover, the individual employer plays a direct role in developing the skill base of the trainee, shaping it to the requirements of the firm. Finally, supply and demand are functionally related, since employers take on as many trainees as they need and are willing to pay for, although there are significant exceptions.

Even though there is a direct and functional link with employers, the ATP, unlike more conventional apprenticeship programs, is still considered a part of the formal educational system. Up to one third of the formal instruction given by the VTC consists of general educational subject matter. The technical content of formal training is worked out in collaboration with the MOE, and joint policy is formulated.

Maintaining the VTC as a part of the formal educational system achieves a number of results. In the first place, the strong desire expressed by Jordanian youth for educational opportunity is at least partly addressed by a program which preserves the trappings of formal education even though it is largely based on training within industry. Then too, the link to formal education serves as a check and a balance, preventing a gravitation towards instruction that is too narrowly specific and solely employer-defined. Finally, joint policy and administrative links with the MOE help assure continuity and coordination in overall manpower development.

Another question that had to be addressed by the planners of the VTC was the significant diversity among employers: the training system had to be very flexible in order to accommodate differences in the size of firms, as well as the great variation in training needs. Work skills vary considerably, even between firms within the same industrial classification. The work performed by employers in one metal fabrication plant, for example, may differ greatly from that performed in another firm, depending, of course, on the type of product, the machinery used, and the organization of work.

Formal training programs have always had difficulty addressing these differences, largely because of the need to offer a general program to large numbers of students. The problem faced by the VTC was no less formidable.

The solution selected by the VTC was to use instructors from the firm itself. This works well in the case of large employers. When more than 12 trainees are within one firm at the same time, it is considered cost-effective to provide the in-plant related technical instruction as well as general instruction. The latter relates directly to the specific job tasks of the firm. Also, the quality of instruction tends to be high because of the available resources and the capability of the training personnel. In the case of small employers, however, it is necessary to group trainees from several employers and to provide classes at a centrally located site. This is a less satisfactory

solution because it is difficult to address the specific skill requirements of a single employer: what is an important skill to learn for one employer may not be important for another; a job problem that occurs at one site may not occur at another. Furthermore, more off-site training facilities will be required as the program expands. At the present time there are eight large, off-the-job training centers, and six small ones. But even with these, there will be a need to provide instruction to trainees who do not have access to off-site training because their job placement is remote, or to simply expand the capacity for group training.

Then again, as more permanent training facilities are constructed by the VTC, the cost advantage to the government will begin to disappear, because less training will occur at industrial sites. The complex problem of addressing training in small employing establishments will continue to be a focal point of concern, particularly since the vast majority of Jordanian employers constitute small firms.

Elements of success

As suggested earlier, the ATP can probably be best characterized as a cooperative work-experience program combined with apprenticeship training. But such a simple characterization would overlook some of the main reasons why the program enjoys widespread acceptance and a high degree of accomplishment.

A crucial element is the fact that the VTC is Jordanian-inspired and designed. To be sure, Jordanian planners went on study tours, consulted foreign experts and solicited donor assistance. Considerable International Labor Organization assistance was used to conceptualize the program. The fact remains, however, that it was the Jordanian planners who, perceiving a need, and agreeing on its general outlines, went shopping among donors to secure the resources and technical assistance required. Not only did they have a substantial stake in the successful development of the VTC, but it was "their project," and it was formulated with a full understanding of the local conditions that had to be considered and the ultimate results to be achieved.

There are a number of other factors which contribute directly to the effectiveness of the VTC. Of primary importance is the support of the government itself. As in other areas of economic development, the Jordanian government has assumed the initiative in addressing training through the VTC. Its leadership has lent direction and cohesion to the overall effort; its support has ensured a high degree of implementation; and its enlightened policy has resulted in mutual cooperation between the public and private sectors. Largely absent is the suspicion that sometimes accompanies government-directed development efforts when employers are unsure, or unconvinced, of the benefits to be derived.

Then again, the high degree of cooperation between the VTC and employing establishments exists in part because the line between the public and private sectors is not sharply drawn. Since the Jordanian government has extensive share-holdings throughout the industrial sector, its own self-interests are served by an effective VTC, along

with the interests of the private sector employers and the large interests of the economy in general.

The linkages established by the VTC are also essential to success, extending vertically and horizontally throughout the governmental structure, and outwardly to industry. The Board of Directors, for example, has direct access to the Prime Minister, functioning somewhat like a "cabinet" dealing with manpower-training policy. The Minister of Labor is the Chairman, and the Director General of the VTC is Vice-Chairman. Included are one member from the Chamber of Industry, two private sector employers, one trade-union member, one member from the engineering association, and one member from the National Planning Council, the Ministry of Education, the Ministry of Labor, and the Ministry of Public Works, respectively. In other words, individuals from groups, agencies and ministries that have a direct stake in manpower planning and training have a place on the stage, participating in the decision-making process. The system ensures the smooth flow of information and a coherent policy formulation.

The VTC maintains a particularly close working relationship with the MOE: the training facilities of the MOE were initially used in the afternoon by the VTC; currently the curriculum of the ATP approximates that of the Trade Training Centers run by the MOE; graduates of both programs are awarded the same certificate, and joint program-planning occurs. The Director General of the VTC is also a member of the Board of Education, and the presence of a representative from the MOE on the Board of Directors of the VTC assures reciprocal representation. Moreover, a permanent committee formulates policy for both the MOE and the VTC, ensuring coordinated training policy and complementary programs, with one tied directly to employers and the other offered within the framework of the formal education system.

What is envisioned is a fully integrated system of training so that the skills learned by, say, a welding student in a TTC are the same skills learned by the ATP trainee, with both groups taking the same examination. In other words, programs will be standardized and made applicable to either the MOE or VTC (Harrell, 1978, p. 52). Whether or not this can be achieved is questionable. And, as discussed in Chapter Three, there are major problems surrounding curriculum development.

A mutually beneficial operational link is maintained with employers, and this working relationship is another prime factor in program success. Consider, for example, the collaboration involved in determining the content of the curriculum: the joint responsibility for training, the vested interest of the employers in developing the useful worker, and the day-to-day contact of the instructors and training officers with the employers. Other aspects of this collaboration involve the direct observation of the trainee by both trainer and employer in the work environment, the mutual participation in student assessment, and the opportunity to complement the direct work-experience of the trainee with practical off-the-job training.

It is, in fact, the mutual incentives that make the VTC work. Since available placement opportunities are crucial to the program, it

is in the interest of the VTC to ensure that trainees meet the expectations of employers in a satisfactory way. The program prospers to the extent that employers are satisfied. On the other hand, it is in the interest of employers to fully cooperate with the VTC: they have available a pool of potential trainees to choose from, an important consideration in a tight labor market; the VTC assumes responsibility in providing segments of training as well as general supervision of trainees; although some training costs are involved, these are offset by the low-cost labor of the trainee; and the employer is not obligated to retain all the trainees after completion of the program, but rather can choose only those who perform best, thus selectively building a better work force over the long term. In general, when these kinds of mutual incentives are present, programs tend to be successful, a fact that should not be overlooked in program design.

Incentives are also provided to the trainee. As suggested previously, trainees "earn as they learn." In addition, the link to the MOE preserves a semblance of formal education, important in a society which is highly status-conscious. For those students who did poorly in the compulsory school years, this program offers an avenue of advancement that is still open.

Limitations and problems

Like any training program, the ATP faces a number of problems, and while these may require considerable initiative and insight to overcome, they are not insoluble. In fact, these problems are, to a great extent, those faced by secondary programs administered under the MOE: strained resources, a lack of qualified instructional staff, insufficient curricular materials, and uneven instructional resources. The VTC is not isolated from these problems just because it addresses industrial training within an employment setting. Indeed, it draws from the same government resources as do formal programs, even though its direct costs are lower for the government because of the contribution of employers. And the VTC will continue to compete in the face of growing demand for limited resources.

Among the more immediate problems are the following:

- Currently there is an inadequate number of off-site training facilities. And if program expansion is to occur, it will have to occur mainly among small employers, creating yet a greater demand for training facilities at different locations. Plans are underway to expand to nine large and five small training centers by 1987. In a real sense, however, the VTC is increasingly taking on the characteristics of a formal program, losing some of the cost advantage to the government that it now enjoys, and perhaps becoming more rigid and less responsive to employment-related needs. And as the VTC evolves in the direction of formal programs, similar problems may come to dominate its planning.

- Cost may in fact become a real concern. As the VTC expands to accommodate small employers, and particularly as it attempts to cover scattered and rural industry, the training groups will be small, resulting in high costs per trainee.

- Similarly, as the VTC broadens its reach to encompass a greater variety of employers, the need for different curricula will correspondingly increase. Instructional demands for materials, cannot now be met, and it can be anticipated that this problem will become aggravated, placing real limits on program quality and expansion.

- Finally, the VTC is probably no more successful than the MOE in addressing labor market imbalances. Although training placements should, theoretically, equal job openings, large numbers of trainees are often placed with a single employer, but few are hired. A large employer, for example, may train 30-50 individuals per year with only 3-5% retained as permanent employees. There are real employment limits on job placements, particularly in highly specialized fields, even in the surrounding oil-producing region. Former trainees are apparently getting jobs, but it is uncertain whether these jobs are in the area in which specialized training was received.

The example of the following two employers, one a large corporation, the other a neighborhood auto-mechanic establishment, is instructive of the problems and challenges confronting the leadership of the VTC, as well as the hopes and accomplishments that are its driving force.

JEPCO, the large employer

Responsible for the power distribution in 70% of Jordan, the Jordanian Electric Power Company (JEPCO) employs over 1,600 individuals, of whom two thirds are directly involved in electrical distribution. This includes the installation and servicing of sub-stations, the laying and servicing of underground cables and overhead lines, and the provision of consumer services. The company has a modest training department which has worked closely with the Vocational Training Corporation since 1978. To date, 336 trainees have completed the three-year Apprenticeship Training Program, and currently, over 200 are enrolled in different phases of the program. Roughly 80 new applicants are accepted each year by JEPCO.

However, of those individuals trained at JEPCO through the ATP, only eight are currently employed at the company. This is due to several reasons. To begin with, the young men must follow up their training period by two years of compulsory military service, which tends to lead to a loss of direct contact with JEPCO and to changed career aspirations. It also appears that many young men use the training experience gained at JEPCO as a way to gain more lucrative jobs in the Gulf States. Then again, it is actually in the best interest of JEPCO to overtrain and create a relatively large, specialized manpower pool

into which the company can "dip" as the need arises. Finally, the apprentices return the training investment in the work they perform at low wages.

JEPCO prefers trainees from the VTC over those from the Trade Training Center (TTC) and the Industrial Secondary School (ISS), even though trainees from the latter have generally shown better academic promise. JEPCO prefers VTC trainees because they can control the program from start to finish, and prior school experience is not considered important as long as the trainee is willing to learn. It is also felt that the school level from which a student comes is only an academic distinction, one that has little relationship to the ability to learn and successfully perform the highly specific and narrow range of work tasks of this level of worker.

As in the case of large employers in general, the apprentices are trained within JEPCO, and their training includes both practical and theoretical instruction. JEPCO specialists conduct the training, with the VTC training officer providing coordination and support. This close tie with the in-firm specialist is a strength of the training, since it ensures the level and specificity of training required for successful on-the-job performance. On the whole, then, trainees receive good training; the employer is satisfied with the trainee; the employer receives an immediate return on his investment in the form of an available labor pool; a few apprentices are directly hired, and remaining trainees appear to eventually get jobs.

The small employer

In sharp contrast to JEPCO is the small, one-pit, auto-repair establishment, using VTC's services. The owner is also the chief, indeed the only, mechanic. Business comes off the street, and comprises a variety of repair tasks that need immediate attention, and that the owner may, or may not, be able to handle well. The two APT trainees basically serve as helpers, learning what they can, extending their knowledge and skills by extending their usefulness. Many of the tasks that they perform are simple and mundane: cleaning up oil-spills, sweeping the floor, lending a hand to hold a part, and doing minor repairs. Considerable time is spent doing little, since the repair jobs come in at irregular intervals.

The condition of the work site is poor. Tools and old auto parts are scattered around the shop; there is a lack of method, and there is frequent need for improvisation, either because the proper tool is not available or the mechanic is not sure of the correct repair procedure. But the owner is outgoing and kind, and he hired the trainees because they are a cheap source of stable labor, they are better than those off the street, and they are available when needed.

The apprentices return to the VTC center once a week for lessons in theory and practice. They should have three days of formal instruction, but it has been difficult to find an instructor. The owner can provide little formal training, so that one day is better than none. For the remainder of the work week, the VTC instructor spends time with

the employer and the other small establishments to which he is assigned, offering technical assistance, monitoring student progress, and providing on-the-job instruction which the employer is unable to give. The training officer visits the firm about once a week, an occasion the owner-mechanic looks forward to, since he can often get technical advice on particularly difficult repair problems, have some pleasant conversation, and learn what is going on about town.

This firm is representative of the conditions found in many small firms. VTC centers are used because of the necessity of forming instructional groups large enough to be cost-effective. The technical and related general instruction is provided by a VTC instructor, and it is less specific to the place of employment. The quality of practical instruction varies greatly because the quality of work in small firms is also variable. Small firms lack resources, equipment may be poor and limited, the quality of work low, and employees in the firms unable or unwilling to provide good training.

The Community Colleges

The community college system is under the jurisdiction of the Council of Higher Education, which establishes overall policy, defines objectives and areas of study, accredits institutions, and sets admission standards. The Ministry of Education administers the 46-institution system, of which 12 institutions are directly supported and governed by the MOE. Fourteen other institutions are associated with other ministries or agencies, and 20 institutions are privately owned. In addition, the MOE is responsible for developing curricula for the total community college system and administering a comprehensive examination to program completers.

The major purpose of the community college system is to prepare individuals to enter directly into the labor market at the technician level. Accordingly, as previously indicated, students cannot matriculate from one of the community colleges into a Jordanian University. In this way, although a path is open for those students who do not qualify for university admission to pursue further education, it leads directly to employment rather than additional education. The Jordanian planners have attempted to avoid a situation common in developing countries, namely, the tendency of considerable numbers of students to use vocational and technical education as a way to eventually work into a university-bound track, abandoning the occupational field in which they received often costly training. The restriction on university matriculation is an attempt to keep students in the occupational field in which they were trained, and to direct them immediately into employment.

However, many students do gain admission to overseas universities, and this appears to be a major motivating force for community college students, particularly those attending private schools. Considering the Jordanian community college system as parallel to their own, foreign countries tend to allow transfer into the university system. Perhaps as many as 20 percent of community college students follow this backroad to university admission. In addition, there is some evidence that students enroll in community colleges in order to postpone their two-year compulsory military service.

Admission to community colleges is open to graduates of the three-year secondary vocational and academic secondary streams. Although entry was formerly open to all high school graduates, students must now earn a grade above the minimum cut-off point on the national secondary level examinations, currently set at 55 percent. A minimum entrance score was established in order to improve the quality of students entering the system. Less than 40% pass the compulsory examinations at the end of the two-year program leading to the technician diploma (Appendix D).

The introduction of a minimum entrance score did improve the quality of students; it also reduced the potential student pool, and this, in turn, restricted the number of institutions which could be established without severely reducing the student enrollment within all institutions. Thus the Council of Higher Education has frozen the number of institutions at the current level. Presently efforts are being made to strike a balance between a minimum admission score and the number of admitted students required to maintain adequate enrollment in all 46 institutions.

Some institutions offer a broad range of programs; others are more selective, addressing the specific skill needs of a public ministry or agency, such as the Queen Noor Civil Aviation Technical Training College. On the whole, the colleges administered by the MOE tend to be the most comprehensive technical institutions. They also tend to be better equipped and administered. Private community colleges, on the other hand, tend to be more restricted in their offerings, preferring courses which require a limited capital outlay or enjoy high enrollments. Instruction also tends to be more "theoretical" in private colleges. Nevertheless, private colleges seem to be more responsive to market demand, and students are attracted by the perceived value of the course offerings. It is also true, however, that some of the course offerings are of sub-standard quality. This has generated considerable concern, leading to a movement to regulate the growth of private community colleges and to establish accreditation standards.

There is little hard evidence on the labor-force placement rate of community college students. "Informed estimates" indicate that placement rates are generally good, particularly in technical and commercial occupations. Surpluses exist in some fields, such as teacher education, and students in engineering-related fields have to compete with the large surplus of university-trained engineers seeking what are basically technician level jobs. As suggested in Chapter Two, community college graduates who formerly matriculated from a secondary vocational program (ISS) are conceived as better employees than graduates who came up from the academic science program. They have a practical background complemented by the technical theory gained through community college instruction.

In the case of public colleges, the completion of a program offers a way to directly enter government service. Students accepting free enrollment are in turn obligated to return two years of public service for each one year of free schooling. This obligation provides a way to break into government employment, a particularly important

opportunity for women who may otherwise encounter barriers of tradition. As indicated in Chapter Three, female enrollment in community colleges has shown a steady increase. However, due to the large outflow of students in recent years, government service cannot absorb all students who have obligations, so there is a large surplus waiting-list.

Addressing employer demand

The community college system is poised to play a critical development role. Typically, one of the more pressing manpower needs in developing countries is for technicians, while one of the more formidable tasks is to train them.

Technicians occupy the important middle ground between professional and skilled or semi-skilled workmen. Accordingly, the technician is instrumental in translating the plans of the engineer or the theory of the scientist into the products of the assembly line or the designs of the shop. The technician communicates with the engineer while he builds with the workmen; productivity and quality work thus flow directly from the skills of the technician. One or two qualified technicians are needed for each eight or ten skilled workmen; four or five technicians are required for one engineer.

Jordanian industrial establishments currently experience an annual turnover rate of approximately 15% for technicians, attesting to their market value and reflecting the out-migration to neighboring countries. In some fields, such as manufacturing and mining, the requirements for expansion and replacement considerably exceed the output from training programs, thus creating a severe manpower bottleneck. Accounting for roughly 65% of the student intake in technician training programs, the community college system has the long-range potential to supply qualified technicians. But the development and maintenance of quality programs are difficult to achieve.

In the first place, the required investment in machinery and equipment is considerable, and it must be regularly made in order to keep up with a changing technology. As discussed in Chapter Three, the budget limitations faced by the MOE apply to the community college system. The system may have already expanded beyond the point where available resources are sufficient to maintain program quality. And the problem of insufficient resources is particularly evident in private institutions where the tendency is to limit capital investment and recurrent expenditures.

Again, in the preparation of technicians, it is highly important that a functional balance be achieved between theoretical and practical instruction. This balance is difficult to maintain, largely because of the existing bias toward academic instruction on the part of student and instructor. Considerably more prestige is attached to academic learning, and, as already mentioned, there is an aversion to working with one's hands. This bias is probably accentuated by the widespread practice of using theoretically trained engineers as instructors and relegating laboratory instruction to assistants.

Then again, a close and continuing working relationship with employers is required in order to ensure that curricula relate to industrial training requirements. Although employers are nominally involved in the curriculum design process conducted through the Directorate of Curriculum Development, this involvement is limited. And even though individual instructors establish contacts with employers, these contacts are not extensive or formalized. Instruction can probably be substantially improved if employers are brought into the planning and instructional development process at the institution level, and this may be one of the more important challenges facing the community college.

Another immediate need is to achieve a standard level of quality throughout the total system. Program quality is uneven, due partly to the rapid growth of the system. Also, there is no way to judge the competency of program completers in view of the fact that the system-wide examination ministered only tests theoretical knowledge. An accreditation system would be useful, since it would provide an externally controlled way to guide program improvement. In addition, a certification system for program completers would provide potential employers with useful information to make hiring decisions. As previously suggested, a major frustration of employers is that they have no good way to judge the potential effectiveness of an individual prior to actual employment.

Alternate program models

Of high potential for effectively addressing the specific and limited training needs of employers are the short-term courses offered by the community colleges in conjuction with firms. Although they presently constitute only between five to eight percent of the total course offerings, they provide a flexible delivery system that can directly address the immediate skill needs of individual or small groups of Jordanian employers.

These courses are basically ad hoc arrangements between individual employers and a community college, and they vary from a few days of intensive instruction to a few months. The employer supplies the trainees, course specifications, and financial support. The college supplies the instructor, the facility, and the equipment.

Short-term courses are important because of the small size of many Jordanian private sector firms and the specific character of their needs. They need to train a relatively small group of individuals at one time, training is immediately needed, and it must be tailored to address specific production problems. Large, long-term institutionalized training programs are simply less functional. The lag-time between needs and the training response is usually too long, and the general character of the training is usually not directly responsive to the specific skill concerns of employers.

In addition, short-term courses fully capitalize on the existing resources of the community college. Use of the facilities is generally during periods of time when they are not normally in service. Thus, training costs are marginal, because they require little additional

investment. At the same time, benefits flow back to the community college. The community college instructors are directly exposed to current production needs, gaining valuable feedback on the latest technology used and the skill level of the existing labor force. This provides a correction mechanism for revising the regular curricula. The additional pay received by the instructors provides an important incentive in a field that is underpaid compared to industrial salaries. And the additional supplies and equipment that can be purchased through the added income helps strengthen the regular college offerings.

Short-term courses offer considerable potential for functionally linking with business and industry. High quality training of short duration, building from the existing skill base of trainees, can address the need for training and retraining of individual employers. Probably one of the more important tasks of planners is to strengthen these programs, expand the base of offerings and institutionalize an administrative system, while at the same time retaining the flexibility to address changing and specific training needs.

Yet another program that has high potential in the community college is cooperative work experience. Although cooperative programs have not been instituted in Jordan, it is a program model that should be considered in future plans. In the first place, one of the major obstacles to the introduction of cooperative programs in developing countries does not exist in Jordan, namely, the lack of appropriate training placement sites. As the VTC has demonstrated, employer collaboration and cooperation is forthcoming. Furthermore, as in the case of the VTC, the facilities and equipment of employers can be used to provide practical training, lowering instructional costs, and supplying a way to substantially extend student enrollments while keeping instructional budgets low. At the same time, training at the employment site compensates for some of the inherent instructional weaknesses that now exist: practical instruction is largely given by the employer, leaving community college instructors to continue to do what they do best -- providing theoretical information; modern and well-run instructional laboratories are less important because the tools and machines of the work place are used; and frequent and periodic contact is maintained with employers, thus establishing a link that can serve to enhance all instruction. Finally, the level of practical training is high, building from the considerable technical and general instruction that is necessary in the preparation of technicians. Community college cooperative work experience programs can thus provide a level of training beyond the reach of the VTC, limited as its students are by marginal academic achievement.

Chapter Five

Summary

Jordan's skill-development systems can perhaps be compared to a leaking pipeline. Although more and more Jordanians receive training, many of them do not reach the domestic labor market and, instead, opt for employment abroad, where wages are higher and the opportunity for savings greater. The outflow of skilled workers from Jordan's economy would, in fact, continue to cause shortages in particular jobs, even if skill development programs were more responsive to employer needs, or if demand could be accurately predicted.

Nevertheless, by any measurement the expansion of training capacity in Jordan over the past decade has been substantial. A broad range of training alternatives is available, providing opportunity to thousands of individuals and making the Jordanian labor force the most highly skilled in the surrounding Arab region. For example, of the approximately 59,000 eighteen-year olds, over 10,000 will have completed a formal secondary-level vocational program of one type or another; 39,000 will have enrolled in secondary level education. In addition, 16,000 will attend a community college, and over 21,000 will enter a Jordanian or overseas university. These are high figures for a developing country.

Review of the Training Systems

The considerable range of training alternatives, varying from short-term pre-employment programs for preparatory cycle completers and organized formal instruction, to on-the-job and technician training, provides multiple ways of addressing complex and changing manpower requirements. No single training approach is sufficient, and the fact that Jordan has multiple training alternatives contributes to a development strategy that has addressed the skill needs of the domestic economy rather successfully on the whole, while at the same time responding to the regional demand for labor. The following is a brief review of the different training systems.

The formal system

The formal secondary vocational education system in Jordan is similar to formal programs in other countries. Moreover, it faces some of the same problems and fulfills some of the same functions.

In general, it can not be expected that secondary programs effectively prepare students for direct job placement: instruction includes general educational components in addition to technical; it tends to address a core of skills common to an occupational field but not specific to any one employer; instruction is less than comprehensive; and practical instruction tends to be limited and mainly based on laboratory activities rather than job experience. A lack of qualified instructors, inadequate curriculum materials, and limited facilities and equipment also make it difficult to establish a strong functional relationship between training and <u>specific</u> job placement.

On the other hand, to say that instruction is less than specific does not mean that it is not useful. Although the formal secondary programs tend to be least effective in preparing students for specific job placement, they are most effective in developing a foundation of skills which prepares an individual to enter into one of a number of related jobs with additional training, often of short duration, and preferably just prior to employment. Considerable flexibility is thus achieved, an asset when specific job placements cannot be predicted with any accuracy. Then again, in the case of the Jordanian labor force, which is characterized by high occupational mobility, broadly based training is desirable because it provides the foundation for further training. Employers, both domestic and regional, value the relatively high educational level of Jordanian workers, which enables them to successfully complete training and retraining on the job. Finally, the more general instruction prepares students to pursue technician level training in the community colleges, with up to 50% of the Industrial Secondary School students following this course.

The formal vocational training system, then, is characterized by a level of training that functions mainly as a preparation for job placement or additional training. Given the student population served, the type of instruction offered, and the institutional constraints faced, probably little more can be expected. But it is also true that the formal system complements other training forms, and that it should probably not attempt to emulate the more job-specific training effectively provided elsewhere. If anything, instruction should be organized around generic skills common to a number of related jobs, and limited to areas of study requiring formal instruction, thus focusing resources on the type of training that the formal system is able to provide most effectively. Formal training is best conceived as the first step in occupational preparation and not as the terminal point.

One of the more intractable problems facing the formal vocational education system is that of program quality. As mentioned before, resources are limited, and rapid program expansion has taxed the limited resources even more at a time when uniform standards of quality throughout all programs have not been achieved. If formal vocational training programs become increasingly disfunctional, it will be because of deteriorating quality and not because of the level of training provided. The qualitative improvement of all formal programs takes precedence over program expansion. This improvement includes better laboratory management systems, repair and upgrading of facilities and equipment, teacher training and upgrading, and curriculum development, among other instructional, management and administrative concerns.

The Vocational Training Corporation

While the formal vocational system best addresses pre-employment training, the Vocational Training Corporation orientates training directly around job placement. The training is specific, immediately applicable to the job, mainly restricted to the job tasks performed, and conducted largely within the work setting. And training is effective: the trainee is productive, he "earns while he learns," and the techniques, processes and machinery of the employing firm are used, although

the quality of training differs between large and small establishments. Given the ability and educational background of the trainee, the practical training on the job and the related technical instruction are suitable, since they are restricted to a narrow range of tasks and require but limited academic skills.

The VTC, then, effectively responds to the specific and immediate skill needs of employers. Trainees are placed where job openings occur; however, in the case of large employers, considerably greater numbers of individuals are trained than are eventually hired permanently. Employers attempt to compensate for the potential loss of employees to the surrounding oil-producing region. But employers also benefit from a stable and relatively inexpensive source of employees since apprentices are productive for three years.

Training costs are shared by employers, but they are not lower than the cost of vocational programs administered through the MOE. Moreover, the training costs are considerably higher at training centers run by companies, reflecting an inability to capitalize on economies of scale. And as the VTC attempts to expand into rural areas and into occupational areas with scattered firms and relatively few trainees, training costs can be expected to increase. Finally, the VTC has limits on the skill level that can be addressed, since the extension of training beyond the level of skilled workers would require substantially greater academic and formal preparation. Real constraints, then, exist on the expansion of programs to serve a greater number of trainees and on the extension of the training format to other skill levels. Nevertheless, the ATP is an innovative and productive way to address the training of skilled workers, and the VTC will continue to play a productive manpower development role.

Retraining and upgrading

The VTC also addresses another labor force need, and that is short-term training and upgrading. Presently, there is a high degree of occupational mobility, with less skilled workers moving into the vacancies created by more skilled workers leaving for the Gulf States. Retraining can ease this transition. Furthermore, as greater numbers of Jordanians return from working abroad, retraining will become increasingly important, particularly since fewer low-skilled workers will probably be required abroad, and they will be returning to the domestic labor force in need of new skills. Then again, as was indicated in Chapter Three, small and medium size employers lack the resources for in-firm training, and in any case they have little need for organized programs. Thus they can profit from short-term training and enhance the skills of a few, but nevertheless essential employees. Particularly important may be the need to find a way to integrate new technical skills into a work force that has been built largely through on-the-job training.

Formal programs probably best provide a foundation for more job-specific training. By coupling the formal secondary system with available short-term training at the work site, a productive combination is created that will enhance the output of both programs. In addition,

there is an apparently substantial surplus of academically trained individuals who have a strong educational background but who lack the specific technical skills demanded in the labor market. This is an additional potential source of highly skilled manpower through retraining which makes use of the educational achievement of these individuals while providing specialized training in the skills of high technology production. The retraining of the current surplus of university trained engineers may be accomplished in this way.

Various government agencies, associations and volunteer organizations often conduct short-term training, although primarily on a limited scale. These programs may, however, provide ways to structure additional training efforts, and should be considered along with the programs conducted through the VTC in future efforts to expand retraining and skill upgrading. As suggested in Chapter Four, the community college system is another potential source of effective short-term training.

The expansion of short-term training should be a major consideration in any effort to enlarge the existing skill-training capacity in Jordan. These programs are directly responsive to domestic labor market needs, and a functional link can be established between business, industry and the formal training systems. Furthermore, few resources are needed: the existing facilities, equipment and machinery of the firm are used, and part-time staff can be recruited from the firm. The employer also participates in course development, and training is specific to the firm. Given real limits on training resources, short-term programs may provide the best opportunity to effectively extend the use of these resources.

The community college system

The community college system addresses a skill level that is higher than that of the VTC or formal secondary level vocational system, namely technician training. Although it faces some of the same problems characterizing these other programs, its students have a higher level of accomplishment, by virtue of having greater ability and being in the educational system longer. Students learn something, even though the quality of instruction is not what it should always be. The technical programs will continue to be a source of skilled technicians for public and private employer alike. However, major problems regarding the quality of instruction need to be directly addressed, and training output needs to be aligned more closely with market demand. It was prudent policy on the part of the Council of Higher Education to freeze the 46-institution system at its current level until institutions have a chance to "settle-out;" the system has simply expanded too rapidly to ensure uniform results.

Major attention also needs to be directed to strengthening the quality of training, since technicians play such a pivotal role in industrial production. Qualitative improvements in the supply of technicians in turn result in qualitative improvements throughout the productive sector. The current short-term, ad hoc training arrangements between current individual employers and a community college, as well as

cooperative work experience arrangements, are two programmic areas that merit additional consideration.

Employer-based training

Considerable training is conducted by employers. Some of the larger employers have established excellent training departments, addressing a range of skill levels within the firm. Resources are generally available, instructional materials are produced within the firm or else secured outside, and knowledgeable and skilled workers are used as instructors. Furthermore, training is a continuing activity, needed to replace rapid personnel turnover and to accommodate promotion opportunities within the firm. In a real sense, large domestic firms supply considerable numbers of workers whom they have trained to better paying employers in the oil-producing states.

Smaller employers conduct less formal training, but they rely more on unorganized, on-the-job training, and they selectively use outside training sources. Technical skills are often "imported" along with machinery and equipment purchased abroad, and returning engineers trained overseas. The formal training system supplies employees who have at least a foundation of skills, but smaller employers are not knowledgeable about training sources, and they tend not to actively establish links with the very programs that could supply their needs.

Linking Employment and Training

The study set out to investigate what makes the training/employment relationship strong, and what makes training interventions responsive to employment-related skill needs. The study team identified a number of conditions that impinge upon the effectiveness of all of the training alternatives reviewed above. However, the ability of different training alternatives to address these conditions varies considerably.

Responsiveness to labor demand

One of the most clearly identified conditions is the extent to which the training output is related to labor market requirements. The obvious purpose of vocational training is to prepare individuals for employment, even though the initial general training may be less direct and may have to be followed by specific training just prior to employment. It is also obvious that some training alternatives are more responsive to labor demand than others.

In-firm training and retraining programs, for example, have a direct relationship to employment by virtue of the fact that trainees are already employed. Similarly, the Apprenticeship Training Program ostensibly places trainees in relation to labor vacancies. But the fact that so few trainees gain permanent employment suggests that the relationship is less direct than desired. Although training input may accommodate domestic labor demands, little is known about the considerable surplus of trainees who apparently find employment in the oil-producing region. The highly specific and narrowly based training received through the ATP may be actually of marginal value for those who

eventually gain employment in jobs other than those they were trained for. The formal programs suffer the double disadvantage of not being able to address either domestic or regional labor market demand. Since they do not even have the "adjusting mechanism" of direct placements by which to gauge local demand, there is no relationship between supply and demand.

Current labor market imbalances accentuate the need for improved labor market information, but the fact that no workable system has been developed only underscores the difficulty of this problem. In general, functional labor market information systems are difficult to develop and maintain, and in this respect Jordan shares a problem experienced by many other countries. In addition, the phenomenon of labor migration generates considerable uncertainty regarding training needs and suggests in turn the need for regional planning. But, in the absence of labor market information, it is impossible to maintain a demand-supply balance, even if training programs are flexible enough to adjust to changing training requirements. Thus, one element generally considered essential by economists for effectively linking training with employment is largely missing in Jordan.

On the other hand, the Jordanians have pursued a training policy that does not rely on labor market information, namely, providing training for all who desire it and who qualify, with little concern for labor market demand. The trained are considered better able to put their skills to use than the untrained. This policy has worked largely because of the employment opportunities abroad. The consequences of a reduction of employment opportunities abroad are unknown, but this is a situation that will probably have to be faced in the immediate future.

Labor market information is most critical for planning formal programs. Formal programs are also the least able to adapt to changing training requirements because of structural inertia. More generic programs, structured around a core of skills common to a cluster of jobs and complemented with theoretical and related academic instruction, is one way to respond to uncertain labor market information. This is an alternative that should probably be explored.

There are also a number of conditions that relate to the quality of training. A strong employment/training linkage requires more than providing an adequate number of new employees; it also requires individuals who are sufficiently trained.

Financial resources

Training takes resources, and the quality of training is directly related to the amount of resources that are available. A distinguishing characteristic of the training programs conducted by large Jordanian corporations is the relative abundance of available resources. Expert assistance can be secured to set-up the programs, quality instructional materials can be purchased, and good instructors can be employed. The training provided through these programs tends to have higher unit costs than that provided by programs in the formal sector, reflecting greater resources and higher quality.

The initial capital investment to establish programs is less of a problem than the maintenance of sufficient levels of recurrent expenditures. Facilities are constructed and equipped, often through donor assistance, but the recurrent expenditures are simply not budgeted to ensure the adequate maintenance of programs, a condition affecting the VTC and formal training systems administered through the Ministry of Education. Thus a pattern is established, in which program deterioration sets in rapidly, and capital costs cannot be amortized over a sufficiently extended period to yield low program costs.

Unless adequate training resources are available, programs are not fully responsive to employment-related skill needs: instruction is restricted to a limited number of skill areas, practical instruction may be limited, equipment becomes obsolete, repairs and maintenance cannot be done, and new technology cannot be regularly phased-in. Trainees simply cannot acquire the skills necessary for employment, and many of the difficulties that the young experience in the labor market, as well as many of the training inadequacies that employers experience, may be directly attributed to poor quality programs resulting from a lack of adequate resources.

Instructional content

Every training program must have a source of technical content, including theoretical as well as practical instruction. This may be provided through highly trained instructors, expatriate technical experts, mediated materials, standardized curricula, among other sources. Moreover, the technical content must relate reasonably well to the performance requirements of the job, and there must be a way of periodically revising the technical content in order to accommodate changes in technology.

In the case of small firms in Jordan, for example, extensive use is made of on-the-job training, but no effective way exists to introduce new technical content, so that this form of training becomes increasingly static. On the other hand, large firms can rely on expatriates and on the latest instructional resources produced for the industry. Considerable training content is also embedded in the technology imported for use.

In the case of the VTC, it shares common problems regarding the lack of quality instructional materials with the vocational secondary schools and community colleges. But the VTC can also rely on the technical expertise of the large employers who conduct training for apprentices within their firms. In any case, one of the more important outcomes of effective training-employment linkages is the identification of relevant technical content. It is this aspect of training that is probably the most affected by the absence or presence of linkage mechanisms. Furthermore, not only must relevant content be initially identified, but there must be a process of regular revision and updating.

Staffing

The quality of instruction is directly related to the quality of the instructional staff. While relevant instructional content is necessary for effective instruction, trained staff are required to

transmit this content. But here again, different program alternatives vary considerably in their ability to employ qualified staff. Employer-based training generally has access to a technically qualified staff which may, however, lack pedagogical skills. Formal sector programs, on the other hand, may be able to recruit instructors who possess pedagogical skills, but who lack technical skills and direct work experience. Then again, formal programs may have greater difficulty recruiting and retaining qualified staff because of competition with private sector wage scales.

Vocational instruction by definition involves the application of practical work skills. Instructors must themselves have sufficient work experience in order to teach practical skills in addition to a sufficient academic and pedagogical training to effectively impart theoretical and technical concepts. Furthermore, technical obsolescence can set in rather rapidly, so that even if it is possible to recruit a reasonably qualified staff there must be the opportunity to periodically upgrade this staff through work experience or in-service training. In the case of Jordan, qualified staff are in short supply, in addition to the absence of in-service training opportunities, compounding the problem of responding to the immediate and changing skill needs of employers.

Management of training environment

One of the more taxing tasks associated with training programs is that of establishing and maintaining a functional, management system. This includes supply and inventory procedures, program evaluation designs, curriculum development mechanisms, repair and maintenance schedules, and the like. The large corporate training programs are in general the best managed, a fact that directly contributes to their efficiency. Formal programs tend to be the least well managed. Informal OJT can be characterized as requiring little in the way of management.

Program management directly impacts on the quality of instruction. The supply and condition of tools, equipment, and machinery determines in part the scope and content of what can be learned.

Yet another way that training interventions can be made more responsive to employment-related skill needs is to strengthen the routine, day-to-day working relationships between those who employ skilled workers and those who train them. There are several conditions that impinge upon this relationship.

Information networks

The fact that communication occurs between the parties involved in the supply-demand linkage, strengthens the connection between training and employment. The success of the Vocational Training Corporation is at least partly attributable to the fact that it has extended linkages vertically and horizontally throughout the governmental structure. Moreover, it has established close working relationships

with over 1000 employers, taking the initiative to identify employers, inform of their program, and address the problems of individual firms.

The formal programs maintain considerably less contact with employers, probably contributing to their tendency to become insular. Formal arrangements for bringing employers more fully into the planning and decision-making process should probably be considered.

Incentives

When all parties involved in the training/employment link have mutual incentives, then this connection tends to be strong. The VTC clearly illustrates the benefit of addressing employers' expectations. It renders a service to employers in the form of supervised, low-cost trainees, but yet it relies on placement stations and financial support from employers -- a working arrangement that serves the complementary interests of employers and the VTC.

There has been some discussion of establishing a payroll tax to finance training through the VTC. Such a proposal should, however, be carefully considered, since it may be highly disfunctional inasmuch as it removes the VTC from dependency on employers for financial support, and thus may remove a strong incentive to serve the interests of employers.

The formal educational system simply has less incentive to consider the interests of employers. They have a source of financial support that is relatively uninfluenced by the extent to which their programs effectively address employment-related skill needs. Programmic decisions are highly influenced by social demand rather than economic concerns. And, while they are responsive to a constituency, this is a public educational constituency whose interests are placed alongside the interests of the greater educational bureaucracy of which the vocational system is but a part.

Intervening influence

Linkages do not just happen. They must be created, guided, and sustained. The initiative for establishing functional training relationships may come from a number of sources: dynamic individuals, the training institutions themselves, private sector groups, the government, or donor agencies. However, in this latter case linkages may not be sustained because of the external and temporary nature of the influence. Furthermore, as suggested earlier, different training alternatives vary according to the degree that linkages are a part of their structural characteristics. The VTC, for example, incorporates close working relationships between employers, training officers, and instructors, as a part of its structure. Day-to-day collaboration between trainer and employer is the substance of its operation. These relationships are not a part of the normal operations of the formal educational system, but they can be developed.

Jordan illustrates the important role of government in formulating and implementing training policy. Its influence is perceived as

positive. At a critical time the decision was made to provide greater educational opportunity and to address employer concern for manpower. Then again, considerable innovations and initiative have been shown in addressing training concerns. Finally, the government has functioned as an intervening influence, supplying resources, bringing together employers, and sustaining efforts. However, while the skill-training effort over the past decade has been substantial, significant challenges remain.

Strengthening Program Design

In Jordan, then, as in most other countries, there are a number of training systems, each with its relative merits and limitations, varying purpose, and the type of training provided. Moreover, the different training alternatives reviewed vary significantly in terms of the structural characteristics which distinguish one program type from another, and include the level and duration of training, the setting of the training program, and the profile of the entering trainee. At the same time, there are a number of training conditions that must be addressed in order to ensure that a particular training program will be reasonably effective. And it is this interface of an individual training alternative, given its specific structural characteristics, with the existing training conditions, that largely determines the extent to which the training alternative can be effective. In other words, training programs have a strong employment/training link when their structural characteristics enable them to functionally address a set of complex training conditions.

Program design decisions can best be made by assessing the structural characteristics of different training alternatives, identifying how the existing conditions can be accommodated, and choosing alternatives that have the most potential for effective implementation.

Appendix A

ORGANIZATIONS AND PERSONS CONTACTED

Ministry of Labor (Tel. 667191)
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Dr. Mansoor Outum, Director, Employment Department
Mr. Jaber Karam, Director, Amman Employment Office (Tel. 461066)
Mr. Adel Lutfi As'ad, Department of Studies (Tel. 663108)
Miss Siham Muhammad Hussein, Chief, Statistical Section (Tel. 663108) (in Department of Studies)

Vocational Training Corporation (Tel. 667197/8)
Mr. Munther W. Masri, Director General
Mr. Abdel-Hamid Eljufout, Training Officer
Mr. D.M. Shakboua, Director, Yajuz Trade Training Center, Amman

Department of Statistics (Tel. 24313)
Dr. Borhan N. Shrydeh, Director General (Tel. 30544)
Mr. Fahed Hiyori, Director, Dept. of Census/Population (Tel. 24313)
Dr. Atef Khalifa, UNFPA demographer with Dept. of Population (Tel. 24313)
Mr. Abdallah Zoubi, Director, Household Survey Program/NHSCL. (Tel. 665827) (old building)
Mr. Abdullwhab Zubi, Director, Employment Survey Program (Tel. 665827)

National Planning Council (Tel. 44466/7/8/9/70)
Mr. Ziad Fariz, Secretary General
Mr. Nabil Sweis, Ass't Secretary General
Mr. Sami Nsour, Science and Technology

Council of Higher Education (Tel. 44338)
Dr. Nuri Shafig, Secretary General
Dr. Khalid Shrandi, Researcher

Ministry of Industry and Trade (Tel. 663191)
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Ministry of Education (Tel. 669181)
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Mr. Nasan Zeyadeh, Head of Agriculture Education
Ms. Ismat Batt Varouqa, Head of Tracer Studies
Mr. Fathi Khalifeh, Training Specialist
Mr. Afif Shrideh, Director, Hassin Abal Hada School, Zarka
Mr. Ahmad Atwah, Director of Vocational Education, Abal Hada School, Zarka
Mr. Said Bader, Director, Abdel Hamad School, Amman

Organizations and Persons Contacted

Civil Service Commission (Tel. 41291)
Mr. Ali Khreis, Director
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Community Colleges
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Dr. Muhammed Malall, Director, Jordan Institute of Management
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Private and Public Sector Employers
Mr. Mamduh Abu-Hassan, Chairman of the Board, Jordan Ceramic Industries, Inc. (Tel. 27801)
Mr. Khalil A. Adwan, Director of Marketing (for Haisle Aguilar, General Manager) Amman Marriott Hotel (Tel. 660100)
Mr. Omar Bdeir, General Manager, Arab Technical Construction Co. (Tel. 63411)
Mr. Marwan A. Bushnaq, Deputy General Manager, Jordanian Electric Power Co./JEPCO (Tel. 36381)
Mr. Rifqi Saleh, Head of Training Section, Jordanian Electric Power Co.
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Mr. Said Ghezawi, Chairman, Jordan Agricultural Projects Co. (Tel. 68141) (farming and irrigation services)
Mr. Albert Nasri Hazeen, Proprietor, Hazeen Garage Workshop (Tel. 844974)
Dr. Mu'in S. Kakish, Research Director, Jordan Management and Consultant Corp. (Tel. 25775)
Mr. Tawfiq Kawar, Managing Director, Amin Kawar & Sons, Ltd. (Tel. 22324) (transport, shipping, and travel)
Mr. Osama Sha'sha'a, General Manager, Amman Stationery Co. (Tel. 42628) (retail trade)
Mr. Bassam Snobar, Professor of Agriculture, University of Jordan (Tel. 844974)
Mr. Adnan Tamimi, Owner, Modern Garage (Tel.)
(automobile repair service)
Mr. Ibrahim Zeine, Chairman, Jordan Ice and Aerated Water Co. (Tel. 22121) (Pepsi-Cola bottling plant and other industry)
Mr. Mohid Safadi, Deputy, Refinery Manager, Jordan Petroleum Refinery Co., Zarqa

Organizations and Persons Contacted

Private and Public Sector Employers (cont.)

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Mr. Kalane, Service Manager, Jett Bus Company
Mr. Kamel Khateeb, Director of training. Jordan Cement Factory (Tel. 74014)

Amman Chamber of Industry (Tel. 44569)
Mr. Issam Bdeir, President and Chairman of the Board
Mr. Abdulhamid Omar, Deputy Director General

Association of Jordanian Contractors
Mr. Hussam I. Hudhud, Deputy President (also Managing Director, Hudhud Shand Ltd., Tel. 42026/41043)

Jordan Federation of Trade Unions/JFTU (or, "Jordan Labor Council")
Mr. Samir Qardan, Secretary General (Tel. 24881, 24778)

AMID EAST/Amman (Tel. 24495/23241)
Mr. Alain McNamara, Director
Mrs. Aida Khoury, Employment Training Coordinator, Vocational Training Support Program

Jordan Institute of Management
Dr. Muhammed Malall, Director

Jordan Institute of Public Administration (Tel. 664111)
Mr. Abdallah Allian, Director General

Appendix B

SOURCES OF SKILL DEVELOPMENT

A. Universities

Universities of Jordan (Amman)
Yarmouk University (Irbid)
Mu'tah University (Amman/Karak)
Universities abroad

B. Post-secondary institutions below university level

(All 2-year institutions are called "community colleges"; formerly some engineering CC's were known as "polytechnics".)

1. Ministry of Education community colleges
2. Other public community colleges (e.g., Institute of Baking Studies, and CC operated by Ministry of Health)
3. Private community colleges

NOTE: MOE has authority for curriculum, examinations, and general supervision; and the Council of Higher Education has planning and accreditation authority for all CC's

C. Secondary-level education and training programs (grades 10-12, or 10-11)

1. Ministry of Education secondary schools

   a) General (academic: Scientific, Literary, or both)
   b) Comprehensive (includes academic and vocational)
   c) Specialized vocational programs

      (1) Industrial, secondary schools (total of 25 occupational specializations offered, typically 6 to 8 per school)
      (2) Commercial (most of these are sections of general secondary schools)
      (3) Agriculture
      (4) Hotel
      (5) Nursing (all are sections of General Secondary Schools)
      (6) Postal (not offered every year)

   d) General vocational (offering 2 to 4 specialized curricula; these new schools will begin operation in 1986)

2. Programs: Two years and less

   a) Training institutions (for some students this option is an alternative to secondary schools)
   b) Trade Training Centers (Ministry of Education, grades 10-11)

3. Vocational Training Corporation (VTC) program

   a) Apprenticeship training programs (ATP) (3 days at Training Center, 3 days on the job leads to Certificate of Trade training)
   b) Short-term programs in collaboration with employers (Entry-level, "Limited Skills")
   c) Retraining and upgrading
   d) Supervisory training
   e) Instructor training

4. Nonformal programs implemented by employers (on the job)

D. Other formal and nonformal skill-training programs

(Some of these are conducted in collaboration with VTC, others independently)

1. Individual private-sector employers (e.g., Jordan Ice and Aerated Water Co., Jordanian Electric Power Co.)

2. Public-sector establishments (e.g., Telecommunications Corp., Water Authority)

3. Quasi-public (joint) enterprises (e.g., Jordan Electricity Authority, Jordan Valley Authority, Jordan Phosphate Co.)

4. Military and Policy

5. Voluntary and private organizations (VPO's)

E. In-service training in public administration, management, and technology development

1. Jordan Institute of Public Administration (JIPA)
2. Jordan Institute of Management (JIM)
3. Royal Scientific Society

Appendix C

ESTIMATED TRAINING INPUT AND OUTPUT, 1982/83

Programs	No. of trainees	Estimated Program Output per year
Secondary Vocational education (3 year)		
Commercial	7,885	2,600
Postal	727	218
Hotel Management	313	90
Agriculture	308	98
Industrial	4,083	1,350
Nursing	813	270
Trade training Centers (2 year)	1,684	840
Women's Education	1,303	650
UNRWA	550	265
VTC (ATP)	2,810	935
Community Colleges	28,167	6,911 (11,149 completed but did not pass the examination)

SOURCE: Extrapolated from The Statistical Educational Yearbook for the Year 1982-1983. Ministry of Education, 1984.

Appendix D

PROJECTED COMMUNITY COLLEGE

PROGRAM COMPLETIONS, 1981-1990

	Completion with passing grade on the comprehensive examination			Completion without passing grade on the comprehensive examination		
YEAR	M	F	TOTAL	M	F	TOTAL
1981	2689	2586	5275	4862	3488	8350
1982	3279	2779	6058	5813	3955	9768
1983	3759	3102	6911	6663	4486	11149
1984	4243	3593	7836	7521	5113	12634
1985	4729	4106	8835	8383	5847	14230
1986	5220	4681	9901	9253	6662	15915
1987	5709	5241	10950	10112	7458	17570
1988	9196	5813	12009	10983	8272	19255
1989	6543	6380	12923	11600	9079	20679
1990	7100	7072	14172	12587	10064	22651

SOURCE: Adel L.A.H. Abdel Rahim. Impact of Secondary and Higher Education Development Upon Supply of Certain Specializations in Jordan. Unpublished Master's Thesis. University of Jordan, 1984.

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